

## ***RETIREMENT PLANNING OF UNIVERSITY FACULTY IN THE ABSENCE OF A MANDATORY RETIREMENT AGE***

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### **ABSTRACT**

The statutory end to mandatory retirement of university faculty has generated concern and uncertainty by university administrators and the governing bodies of university systems with respect to the questions of how and to what extent faculty retirement behavior may be altered and the subsequent effects on the cost and quality of higher education. This research investigates the retirement decision making process of Kansas Board of Regents faculty by examining faculty characteristics and attitudes toward retirement and quantitatively estimating the effects of economic and non-economic factors on the retirement decision. The "fear" that large numbers of faculty will choose to significantly delay their retirement in the absence of a mandatory retirement age is not supported by the data.

### **INTRODUCTION**

January 1, 1994 marked the statutory end to mandatory retirement, at age 70, for tenured university faculty.<sup>1</sup> The potential for legislatively conferred lifetime contracts upon university faculty created uncertainty and concern within higher education, particularly by university administrators and the governing bodies of universities. The uncertainty of administrators resides with the questions of if, how, and to what extent the retirement behavior of university faculty may be altered and how these changes may affect the quality and cost of higher education. If faculty retire at a later age, a more senior faculty would potentially increase salary costs and reduce the entry rate of new faculty.<sup>2</sup> An additional concern is the potential impact of possible delayed retirements on the introduction of new ideas through research and instructional activities and on the general level of faculty effectiveness. These concerns are tacit recognition that the perceived quality, vitality, and ability to embrace change by universities are fundamentally related to the quality and vitality of its faculty.

Although considerable research has been done concerning the retirement decision by workers in general, little research in comparison has focused specifically upon the retirement decision of university faculty and there has been no recent systematic examination of retirement planning by faculty in Kansas Board of Regents institutions.<sup>3</sup> The purpose of this research is to investigate the retirement planning process of Kansas Board of Regents faculty by examining faculty characteristics and attitudes toward retirement and quantitatively estimating the effects of economic and non-economic factors on expected retirement. This type of information may enable

universities to potentially "manage" or influence retirement patterns through early retirement or phased retirement initiatives.

#### **DATA**

Surveys were mailed to tenure-track faculty age 50 and over at all Kansas Regents institutions.<sup>4</sup> Twelve hundred and eight surveys were returned for a 58% response rate with no significant difference in response rates across the six Regents universities.

The average age of the Regents faculty sample is 57.2 years and 21 percent are women. They have been working at their present university an average of 21.6 years and have an average of 25.9 years of total university employment. All faculty are in tenure eligible positions and 66% are tenured. Ninety-seven percent are employed full-time. Virtually all faculty who reported part-time employment are participating in a phased-retirement program.

Administrators were arbitrarily defined as any respondent reporting that more than 50% of their workload consisted of management or senior administration responsibilities. The average instructional, research, and service load of a faculty member is 44.6, 23.1, and 15.4% respectively of total workload. The faculty workload percentages for instructional, research, and service activities are reduced by including as "teaching" faculty, faculty who have part time administrative appointments such as directors, coordinators, and department chairs whose administrative appointments are typically 50% or less. Faculty reporting no management responsibilities constitute 73.3% of the sample and have an average teaching, research, and service loads of 48.8, 25.8 and 16.1% respectively.<sup>5</sup>

#### **RETIREMENT PLANS OF KANSAS REGENTS FACULTY**

The absence of a mandatory retirement age removes the focal point of age and makes the retirement decision a more personal and deliberative one that focuses upon economic factors and the broader set of individual or family circumstances. Regents faculty surveyed were asked if they had in mind a specific age (or age range) at which they expected to retire. Those initially responding yes (73%) were then asked to state their expected retirement age, indicate whether they were firmly set to retire at that age (54% were), and if they had recently changed their mind about their expected retirement age (74% indicated no, while 9% indicated they recently decided to retire at an older age and 17% recently decided to retire at a younger age). Faculty who did not initially specify a retirement age were asked a secondary question. If they had to decide right now about a likely age at which they would retire, what age would that be? Table 1 reports frequency and cumulative percentage distributions of expected retirement ages for both groups labeled as initial responders and second responders.

#### **Predicted Retirement Versus Actual Retirement**

How well does planned or predicted retirement behavior correspond with actual retirement behavior? Although a majority of Regents faculty indicated a firmly set retirement age with no recent changes, life-cycle theory suggests that retirement plans are partially made on the basis of expectations about future economic and non-

economic factors. If changes such as health or personal financial circumstances change, then retirement plans will likely change.

Anderson, et. al., [3] using the Retirement History Survey (RHS) were able to track, for ten years, a sample of men who stated their retirement plans in 1969. They found that 57% retired when they said they would, 24% retired earlier and 19% retired more than one year later than initially planned. The major reasons for deviations from their retirement plan were unanticipated changes in health status, sharp increases in real Social Security benefits and a poor economy. Barring unanticipated changes in health and future income streams, knowledge of and a reasonably accurate prediction of retirement income upon retiring at various ages is likely a key determinate in the accuracy of a worker's predicted retirement age.

Kansas Regents faculty were surveyed during a period of economic expansion accompanied by above average stock market returns. Therefore their reported expected retirement age may have been influenced by an optimistic view of future economic conditions.

**Table 1**  
**Frequency and Cumulative Percentage Distributions of Expected Retirement Age of Kansas Regents Faculty**

Age	Initial Responders		Second Responders	
	Frequency	Cumulative Percentage	Frequency	Cumulative Percentage
55	8	1.1	1	0.4
56	5	1.7	-	-
58	17	4.0	-	-
59	6	4.8	-	-
60	43	10.6	12	5.6
61	19	13.2	1	6.0
62	97	26.2	14	12.0
63	29	30.1	1	12.4
64	90	42.2	2	13.2
65	161	63.8	57	37.6
66	52	70.8	4	39.3
67	17	73.1	7	42.3
68	87	84.8	15	48.7
69	9	86.0	-	-
70	75	96.1	79	82.5
71	6	96.9	8	85.9
72	11	98.4	-	-
73	3	98.8	1	86.3
74	4	99.3	1	86.8
75	3	99.7	23	96.6
78	2	100.0	2	97.4
80	-	-	5	99.6
85	-	-	1	100.0
N		(744)		(234)

### REASONS FOR RETIREMENT: REGENTS FACULTY

Faculty were presented with a list of factors that potentially affect the retirement decision and asked to rate each factor on degree of importance to their retirement decision. Ratings of these factors in Table 2 convey that financial ability



### Financial Ability

Likely the most important concern for individuals considering retirement is the effect of retirement on their economic well-being. Three studies initiated for the Consortium on Financing Higher Education found that "fear of inadequate income during the first two years of retirement was an important factor that served to delay or postpone retirement" [16, p. 57]. Kansas Regents faculty were asked how their standard of living after retiring would compare to their present standard of living during the first year of retirement and five years later. Table 3 indicates that a majority of faculty expect their standard of living to be better or about the same both one and five years after retirement.

**Table 3**  
**Expected Standard of Living After Retirement of Regents Faculty**

	First Year of Retirement		Five Years After Retirement	
	Frequency	Percent	Frequency	Percent
Better than now	73	7.4	57	5.8
About the same	678	68.4	561	56.7
Not as good as now	193	19.5	256	25.9
Much worse than now	14	1.4	57	5.8
Not certain	33	3.3	58	5.9

Simple regression results estimate that among faculty who expect a decline in their living standard the first year of retirement, there is a statistically significant ( $Pr=.02$ ) postponement in expected retirement age of nine months compared to faculty not expecting a declining standard of living.<sup>6</sup> Faculty expecting a declining living standard five years after retirement delay their expected retirement age, on average, by approximately one year ( $Pr=.004$ ).

### Inflation

Fundamentally, greater inflationary expectations imply a lower expected future value of real retirement benefits. This in turn would lead to greater uncertainty, other things equal, about the adequacy of post-retirement income and hence the possibility of delayed retirement. Social Security benefits are currently inflation indexed, perhaps over indexed, but private pension plans normally are not.

This generation of surveyed faculty has experienced, during their work life, one of the most pervasive high inflation periods in U.S. history. Like the generation that experienced the "great depression" of the 1930's, and its effects on their expectations and decision-making, one would expect Regents faculty over age 50 to perhaps "fear" the effects of inflation eroding their purchasing power, particularly post-retirement income and thus influencing retirement age. This data set suggests that fear of inflation is perhaps overstated.

Kansas Regents faculty indicated that they expected inflation to average 4.1% over the next four years and 5.6% for the five to ten year period. Simple regression results, however, suggest that inflationary expectations of Kansas Regents faculty do not have a statistically significant impact on expected retirement age. Faculty expecting a lower standard of living evidently does not particularly fear erosion of purchasing power given the current low inflation economic environment.

Instead, expectation of a lower living standard may derive from the level of expected post-retirement income weighed against expected post-retirement living expenses or quality of life issues.

### **Health**

Health status may intervene significantly in a worker's retirement decision and the general assumption is that poor health will result in earlier retirement. Health is a multidimensional concept that includes both physical and mental aspects, including cognitive functioning. "Good health" is generally thought of as a "package" that requires no significant deficiencies in any dimension. However, the relative importance of these health dimensions is occupationally related. For example, maintenance of physical strength is certainly more important to a fire fighter or policeman than to a university professor.

There are several measures or proxies to assess health status and just about as many disagreements by researchers over the relative efficacy of these measures. One major source of disagreement involves the validity of using self-assessment measures of health status rather than a formal clinical assessment. It is argued that the availability of disability benefits may provide an incentive for some individuals to overstate the severity of a health condition. Also, the direction of causality between health state and retirement is not always clear. Certainly poor health can lead to early retirement. However, male workers who retire early may use health status as a "socially acceptable" rationalization for exiting the labor force early rather than admitting they have a stronger preference for leisure rather than work.

The concern that workers who retire early may use health status as a "socially acceptable" rationalization is muted for this faculty group since they are presently working and hence not providing a post-retirement reason why they retired. Further, although one's perception of poor health may not be clinically supported, the perception itself may nevertheless influence retirement planning and hence is important.

Regents faculty rated "state of health" as the third most important consideration in their retirement decision (Table 2). Five percent indicated poor health as a primary reason for their retirement and an additional 2.7% gave poor health as a secondary reason for retirement. Only eleven faculty under age 65 cited poor health as a reason for their expected retirement.

The Regents faculty survey contained three health related proxies. As subjective measures, faculty were asked to describe, on a Likert type scale, the state of their health and whether they have a health condition that limits ability to work. Also asked was the number of workdays missed in 1996 and in the years 1990 through 1995.

Overall, 97% of faculty reported that their health as either "very good" or "good," but 7% indicated the presence of a health condition that limits their ability to work. Only one respondent over age 64 reported a "very poor" health condition. This likely indicates that older faculty with poor health have retired. If not, then the Likert scale for poor health is likely different for older faculty compared to younger faculty.<sup>7</sup> The average number of work days missed was 2.2 and 8.8 respectively for 1996 and the years 1990 through 1995.<sup>8</sup> Health measures by age group are reported in Table 4. Not unexpectedly, as faculty age the average number of missed workdays increases.

The last column of Table 4 reports the percentage of faculty in each age group that have a health condition that limits ability to work. Increasing age increases

the number of faculty with a work limiting health condition until age 65; after which the percentage falls, again suggesting that health limitations after age 65 prompts retirement.

**Table 4**  
**Indicators of Health Status of Regents Faculty by Age**

Age Group	Average Work Days Missed, 1996	Average Work Days Missed, 1990-95	Health Condition Limits Work
50-54	1.1	7.8	4.9%
55-59	1.5	7.0	7.9%
60-64	2.9	9.1	8.3%
>64	7.0	19.7	7.4%

### **Earnings From Current Employment**

Another factor that potentially influences the retirement decision is earnings or salary from working. The relationship between earnings and expected retirement age, however, is not a simple one. Economic theory suggests that an increase in earnings increases the price of leisure and hence reduces the consumption of leisure (a substitution effect). However, an increase in earnings also increases wealth. Increases in wealth lead to greater consumption of normal goods and services including leisure (an income effect). The theoretical net effect of earnings on retirement (i.e., the "purchasing" of leisure) is unclear.

A review of previous studies suggests that when statistically significant results have been estimated, more often studies have indicated that higher earnings delay the age of retirement (i.e., the magnitude of the substitution effect is greater than the income effect) [15 , p. 146]. Simple regression results for Regents faculty data estimate a positive coefficient for the effect of earnings on expected retirement age (i.e., higher earnings delay retirement), however, the coefficient is not statistically significant.<sup>9</sup>

### **Job Satisfaction –**

Job satisfaction represents a psychological variable that likely influences the retirement decision. From the perspective of utility maximization, job satisfaction represents a worker's "tastes" that are subjectively determined by a variety of factors. These factors include general attitudes toward work compared to leisure (i.e., work ethic), the undesirable (or desirable) attributes of a specific job (i.e., degree of stress, monotony, risk, etc.), compatibility with coworkers and/or supervisors, and the general ambiance of a specific work environment.<sup>10</sup> Measures of job satisfaction are not readily available in many of the national data sets used for labor market research. The available studies, however, suggests that job satisfaction does influence the retirement decision but not as much as other influences [18]. Regents faculty rated degree of satisfaction/dissatisfaction with work (Table 2) as the second most important factor influencing the retirement decision. Also when asked the principal reason they would retire, nine percent of faculty indicated dissatisfaction with current job. When negative job attributes of "stress," "burn-out," etc. are included, 17% of faculty indicated that a negative work environment would be the principal reason for retiring.

The Regents faculty survey contained several questions that bear upon the issue of job satisfaction. From a global perspective, faculty were asked what presently provides more personal satisfaction, work activities or leisure activities. Responses are summarized in Table 5 and appear to suggest a strong work ethic.

Relating more specifically to current work environment, faculty was asked to indicate their like or dislike working in their present job. These ratings in Table 6 suggest that almost 90% of faculty like their present job. These results are somewhat incongruous with the reasons for retirement in which 17% of faculty indicated that job dissatisfaction was their principal reason for retiring.

**Table 5**  
**Regents Faculty Attitudes Toward Work and Leisure**

<b>What provides you more personal satisfaction-work or leisure activities?</b>	<b>Frequency</b>	<b>Percentage</b>
Work	417	43.9
Leisure	102	10.7
About Equal	417	43.9
Not Certain	14	1.5

**Table 6**  
**Regents Faculty Attitudes Toward Working in Their Present Job**

<b>How much do you like working in your present job?</b>	<b>Frequency</b>	<b>Percentage</b>
Greatly enjoy working	474	49.7
Like working	372	39.0
Fairly neutral about working	51	6.0
Dislike working	38	4.0
Greatly dislike working	11	1.2

Another 12.5% gave job dissatisfaction as a secondary reason for retirement. In Table 6 only 5% indicate a dislike for their present job. A possible explanation or reconciliation of these seemingly disparate results may reside in an ambiguity with respect to the meaning of "job." Faculty may be interpreting "job" as meaning their profession or specialty to which most faculty have a strong attachment. Thus faculty may simply dislike some aspect(s) of their work environment but nevertheless are strongly attached to their profession. Responses to even more specific queries relating to job satisfaction in terms of work career, salary increases, and promotion in academic rank are reported in Table 7. Clearly the greatest source of dissatisfaction resides with salary increases while the clear majority of faculty are satisfied with progress of their career and promotion in academic rank.

Does dissatisfaction with specific aspects of the work environment translate into a significant impact on expected retirement behavior? The more global question of whether faculty like working in their present job has a statistically significant (Pr=.0001) impact on estimated retirement age. It is estimated that faculty who dislike working in their present job, on average, retire 2.85 years earlier compared to



faculty who like their present job.<sup>12</sup> The almost three years of estimated difference in expected retirement age would be consistent with a behavior pattern of retiring at age 62 rather than age 65 if one dislikes their present job.

**Table 7**  
**Regents Faculty Attitudes Toward Work Career, Salary Increases, and Promotion in Rank**  
**(Percentage of Total)**

Ranking	Progress of Work Career	Salary Increases Current Employment	Promotion in Academic Rank
Very satisfied	47.4%	8.6%	54.5%
Somewhat satisfied	37.5%	25.3%	23.0%
Fairly neutral	4.7%	10.1%	8.6%
Somewhat dissatisfied	6.9%	27.1%	8.2%
Very dissatisfied	1.6%	28.9%	4.8%

The more specific job satisfaction queries (Table 7) individually do not have a statistically significant impact on expected retirement age. This insignificance includes salary increases in which 56% of Regents faculty indicate dissatisfaction with past salary increments. These results suggest that dissatisfaction with annual salary increases alone, are not sufficient to affect retirement age, which would be consistent with utility-maximizing behavior if retirement is the highest valued alternative available to a faculty member. This ignores psychic costs or benefits associated with alternative work or retirement choices.

### **Role Of Pension Plans**

In the U.S. economy, private pensions are an increasingly important source of retirement income. In 1974, only 24% of individuals age 65 and over derived retirement income from some type of private pension plan. In 1992 coverage has increased such that 37.2% of this group receive private pensions or annuities [22, p.117, Table 4.7]. By contrast at least 83% of workers in the public sector, including public colleges and universities, have some type of pension plan [4]. With the elimination of a mandatory retirement age, there is concern that the actual age of retirement of faculty may be influenced, to a greater degree now by the type of private pension plan and specific provisions of the pension plan.<sup>13</sup> The absence of a mandatory retirement age has also impacted the flexibility of higher education to use pension plans as a policy tool to manage long-term faculty resource requirements. Pension plans generally create a positive incentive to retire (compared to the absence of a pension plan) and give workers greater latitude in choosing when to retire. They can provide post-retirement income, usually before Social Security benefits become available, and many plans contain early retirement provisions.

The pension plan provided by the state of Kansas to Regents faculty is a defined-contributions plan through TIAA/CREF and other providers. However, defined-benefits state plans are the most common type of plan in the public sector, including public colleges and universities.

Expected standard of living after retirement was discussed previously as a proxy for financial ability to retire. An important element that helps form an expectation of the post-retirement standard of living is the stock of pension assets held by a faculty member at retirement age. The estimated pension assets expected

by Kansas Regents faculty at retirement by age group are reported in Table 8. In column 4, estimated salary at retirement was determined by growing the current salary of each faculty member by 3% each year until the expected age of retirement is reached.

A rule of thumb frequently used by financial planners to estimate the minimum pension assets "needed" for retirement is six to nine times salary at retirement. This retirement ratio in the last column is calculated by dividing estimated pension assets at retirement by estimated salary at retirement. Only the age 60-64 group meets that threshold value. However, the retirement ratio for younger faculty (i.e., close to age 50) in the sample can be and often is accelerated as they near retirement through the use of supplemental retirement annuities (SRAs). The correlation between the retirement ratio and expected retirement age is highly significant ( $Pr=.001$ ). Quantitatively, a unit increase in the retirement ratio reduces expected retirement age by 2.5 months. Does the correlation of financial ability to retire and expected retirement age vary by how far or close a faculty member is from her/his anticipated retirement age? Intuitively, the closer to actual retirement should enhance the concern for pension benefits and good estimates of the income flows from those benefits.

**Table 8**  
**Expected Retirement Age, Estimated Pension Assets at Retirement,**  
**Estimated Retirement Salary and Estimated Retirement Ratio by Age Group**

Age	Expected Retirement Age	Estimated Pension Assets at Retirement	Estimated Salary at Retirement Ratio	Estimated Retirement Age
50-54	63.4	\$413.5	\$77.1	5.36
55-59	64.5	409.7	70.0	5.85
60-64	65.9	408.2	66.1	6.18
>64	69.0	360.9	61.4	5.88

Notes: Estimated pension assets at retirement do not include Social Security benefits and unit of measurement is thousands of dollars. Estimated salary at retirement is calculated by growing the average current salary by three percent each year until expected retirement age is reached. Unit of measurement is thousands of dollars. Expected retirement ratio is estimated pension assets at retirement (column 3) divided by estimated salary at retirement (column 4).

Faculty farther away from retirement, although aware of the need for pension assets, may be more prone to philosophical thoughts concerning their basic attitudes toward work and leisure. To evaluate this, Table 9 reports correlation coefficients between retirement and financial ability to retire by age groups.

Up to age 60, the strength of the relationship increases and then decreases. In fact after age 64 there is no significant relationship between retirement age and financial ability to retire. This may suggest that for this subset of faculty over age 64, of which many are likely to have the financial ability to retire (i.e., a retirement ratio of 5.88), the sufficient condition or trigger for retirement has not occurred. These faculty are likely healthy, productive, and comfortable with their work environment.

**Table 9**  
**Correlation Coefficients and Significant Levels for the Relationship Between  
Expected Retirement Age and Expected Retirement Ratio By Age Group**

<u>Age Group</u>	<u>Coefficient</u>	<u>Correlation Pr Value</u>
All Faculty	-.240	.0001
Age 50-54	-.293	.0001
Age 55-59	-.374	.0001
Age 60-64	-.243	.0003
Age > 64	-.055	.6540

### **Longevity**

Intuitively, retirement behavior should be influenced by an individual's expectation of how long they expect to live. A basic utility maximization model for work (or goods) and leisure predicts that a decrease in life expectancy will result in the consumption of more leisure (less work) and hence, other things equal, an earlier retirement age. The survey asked Regents faculty to estimate the average life expectancy for someone of their age and gender, i.e., the average age that someone like themselves usually live. The average stated life expectancy of female faculty is 81.9 years and 79.2 years for male faculty. The simple correlation between life expectancy and expected retirement age in the Regents data set is positive and statistically significant ( $Pr=.001$ ). Further, it is estimated that a one year decrease in life expectancy decreases expected retirement age, on average, by slightly more than one month. Although statistically significant, the estimated impact of longevity on expected retirement age is minimal compared to other factors.

### **Family Effects**

Rapidly increasing labor force participation rates of women during the past three decades has enhanced the need to better understand how work and retirement decisions are made in a family or joint decision-making context. Data requirements for such a model require rather comprehensive knowledge about both spouses ages, health, earnings, pension coverage, number of children and age distribution of children. This would enable questions such as how and to what extent poor health of the husband (wife) influence the wife's (husband's) work and retirement behavior. Since the major purpose of this study is not to examine joint or family retirement behavior, relatively sparse information was collected that bear upon these issues.

An example of joint decision making within dual earner households involves the coordination of a common retirement year or alternatively minimizing the time interval in which the husband or wife remains in the labor force after the other retires. Sixty-eight percent of Regents faculty have an employed spouse. To evaluate whether expected retirement age involves coordination, married faculty with a working spouse were selected from the sample. This married faculty sample was further screened to include only those faculty in which both family members reported a health status of either "good" or "very good," thus minimizing the effects of poor health upon the retirement decision. Age difference (DIF) was calculated by subtracting spouse's age from the faculty member's age. The mean value of DIF is 2.93 with a standard deviation of 5.25. Evidence to support coordinating retirement behavior would suggest that a positive DIF value (i.e., a faculty member older than

his/her spouse) would increase expected retirement age (i.e., delay retirement) and visa-versa for a negative DIF value.

The correlation in the Regents faculty is between DIF and expected retirement age is positive and highly significant (Pr=.0002). Quantitatively, a positive DIF value increases expected retirement age, on average, by slightly more than one year. These results provide evidence of retirement coordinating behavior.

## MULTIVARIATE ESTIMATION AND RESULTS

### MULTIVARIATE ESTIMATION AND RESULTS

From the discussion above, several factors in isolation are significant in influencing expected retirement age. However, multivariate analysis is required to sort out the independent effects of these factors in influencing retirement planning and their relative importance. Their impact on the retirement decision can be specified as:

$$ERA_i = \beta_0 + \beta_1 X_{ki} + U_i \quad (1)$$

where  $ERA_i$  is estimated retirement age,  $X_k$  represents a set of explanatory variables thought, a priori, to influence the retirement decision, and  $U_i$  is an error term with classical least squares properties. The  $X_k$  explanatory variables include financial ability to retire (ABILITY) measured by the expected or estimated retirement ratio (Table 8) calculated as expected pension assets at retirement divided by expected salary at retirement; health of the faculty member (HEALTH) coded 1 if health limits faculty member's ability to perform work activities and 0 otherwise; current salary (SALARY); job satisfaction (JOBSAT) coded 1 if faculty member is dissatisfied working in their present job and 0 otherwise; and expected longevity (LONGEVITY) measured as the expected length of life for someone the same age and gender as the faculty member

Estimates are reported in Table 10. The independent variables are individually sequenced into the model to give an indication of the robustness or stability of the estimated coefficients. The estimated coefficients behave quite well with only minimal changes in their magnitudes, as additional independent variables are included in the model. All independent variables in the model, except SALARY, are statistically significant at the .05 level or greater and have the theoretically correct sign. Poor health and job dissatisfaction reduce, on average, expected retirement age by approximately two and three years respectively. As previously noted the effect of current salary on expected retirement age is theoretically ambiguous because of conflicting substitution and income effects. The negative SALARY coefficient, if significant, would mean that the income effect dominates the substitution effect. Most previous studies have estimated that salary has a positive effect on retirement.

The size and significance of the HEALTH coefficient is reduced after the introduction of LONGEVITY in the model. The longevity survey question asked faculty "What is the average age that people like you (i.e., same age and gender) usually live to be?" Even though the question "like you" explicitly stated age and gender, it should not be surprising that ones own health may influence the response and thus introduce some collinearity with HEALTH into the model.

**Table 10**  
**Regression Estimates of Expected Retirement Behavior of Regents Faculty**

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	67.7 (223)	67.8 (223)	68.2 (107)	68.5 (110)	59.6 (32.7)
ABILITY	-.213 <sup>a</sup> (2.17)	-.213 <sup>a</sup> (2.42)	-.220 <sup>a</sup> (2.23)	-.210 <sup>a</sup> (2.53)	-.216 <sup>a</sup> (2.82)
HEALTH	-2.18 <sup>a</sup> (-2.64)	-2.19 <sup>a</sup> (-2.65)	-2.09 <sup>a</sup> (-2.58)	-1.39 <sup>c</sup> (-1.72)	
SALARY	-.059 (-.73)	-.095 (-1.18)	-.083 (-1.05)		
JOBSAT	-3.52 <sup>a</sup> (-5.96)	-3.44 <sup>a</sup> (-5.91)			
LONGEVITY	.111 <sup>a</sup> (5.18)				
R <sup>2</sup>	.06	.07	.07	.11	.14
SEE	4.0	4.0	4.0	3.9	3.8
N	834	834	834	834	834

Notes: Dependent variable is expected retirement age (ERA). Values in parentheses below estimated coefficients are t-values. The superscripts a, b, and c indicate coefficient significance levels of .01, .05, and .1 respectively.

The relative importance of the independent variables in influencing retirement can be determined by normalizing the estimated coefficients. These coefficients are shown in Table 11.<sup>14</sup>

**Table 11**  
**Normalized Regression Coefficients**

Variable	Normalized Coefficient
ABILITY	-.419
HEALTH	-.301
JOBSAT	-1.30
LONGEVITY	1.25

Note: A normalized coefficient is the estimated coefficient multiplied by the ratio of the mean to the standard deviation of a variable.

The normalized coefficients indicate that job satisfaction of a faculty member is the most important influence on the retirement decision. Intuitively, it

might be expected that the financial ability to retire would be the most important influence. That it isn't may indicate that financial ability to retire is a necessary condition to retire and the decision to retire is then triggered by other factors such as poor health or job dissatisfaction.

### **Coordination Of Retirement For Faculty With Working Spouses**

For a sub sample of married faculty with working spouses, an additional independent variable DIF was added to the model (i.e., model 5 in Table 10) to test for coordination in the retirement behavior of dual earner households. Recall, DIF measures the difference between the faculty members age and that of his/her spouse. A positive DIF value implies the faculty member is older than her/his spouse and evidence of coordinating retirement dates occurs if, other things equal, the faculty member delays retirement, i.e., a positive DIF coefficient. The DIF coefficient is positive (.116) and statistically significant ( $P=.0003$ ). Quantitatively, each additional year a faculty member is older than their working spouse, delays retirement, other things equal, by 1.4 months. These results imply that prediction of retirement age should take into consideration age differences of individuals with working spouses, particularly if there are substantial age differences.

### **SUMMARY AND CONCLUSIONS**

Seventy-three percent of the faculty sample indicated they had a definite retirement age in mind, 54% were firmly set on that retirement age, and 74% of those indicated they had not recently changed their mind about their expected retirement age. Seventeen percent of those faculty who had recently altered their retirement plans, now plan to retire earlier and nine percent plan to retire later. The average age of expected retirement for faculty with a firm retirement age in mind is 64.9 years and 65.7 years for all faculty, including those without a firm retirement age in mind.

Regents faculty gave a number of reasons for why they would retire with financial ability to retire the most frequently cited reason. Achieving the financial ability to retire appears to be a necessary condition for retirement and, once achieved, other retirement factors trigger the actual decision to retire. In descending order of importance, measured by frequency cited, the six next important reasons given for retirement were: pursue other interests, dissatisfaction with current job (category includes stress and "burn-out" reasons), desire for more freedom to enjoy life, travel, qualify for retirement benefits, and poor health.

Although poor health was cited less than several other reasons for retirement, there is evidence that health nevertheless plays an important role in influencing the retirement decision. Specifically, the data indicates that only eleven Regents faculty under 65 reported being in poor health (i.e., a condition that limits ability to perform current work related activities). And the percentage of faculty indicating poor health decreases after age 64 suggesting that once the ability to draw public and/or private pension benefits occurs, retirement also occurs when a poor health condition is present. Also when given a separate list of factors, faculty rated "state of health" as the third most important consideration in their retirement decision.

The "fear" that large numbers of faculty will choose to significantly increase their retirement age in the absence of a mandatory retirement age is not borne out by the data. In fact the opposite may be true. Kansas Regents faculty's planned

retirement age is earlier than the actual retirement age for a comparison group of faculty at other colleges and universities.<sup>15</sup> Also, for those faculty that have recently changed their expected retirement age, twice as many indicated they will now retire earlier than those who now plan to retire later. Additionally, the concern that faculty will develop health problems as they age will, in the absence of a mandatory retirement age, continue to teach at a reduced level of effectiveness is not supported by this data set.

The data suggests that although financial considerations matters to virtually all faculty, other factors that are very important to some faculty are unimportant to others. This implies that the retirement decision is a very personal decision and one often surrounded by a set of individual or family circumstances. This has implications for policy formulation by institutions wanting to influence retirement rates of faculty. The development of incentive programs, largely financial, may need to strike a delicate balance between flexibility to meet individual circumstances and provide equity in retirement opportunities for eligible faculty. The response or success of an early retirement program may also depend upon its duration. A program of limited duration or a limited “window of opportunity” may stimulate retirement decisions to a greater extent than one perceived by faculty to be in place for many years.

#### ENDNOTES

1. Public Law 99-592 enacted in 1986 amended the Age Discrimination in Employment Act to eliminate mandatory retirement. The effective date was 1987 with delayed implementation for universities until 1994.
2. A study by Southworth and Jaqmin (1979) estimated the cost impact of increasing the mandatory retirement age from sixty-five to seventy retrospectively using faculty flow data from 1974 to 1978. The estimated impact was simulated under varying assumptions regarding faculty size and the ratio of tenure awards to total faculty. Factoring out the effects of natural aging on costs, estimated payroll costs would have increased by an average of two to three percent.
3. See Hurd (1990) for a survey of retirement literature for workers in general. Many of these studies attempt to explain the secular fall in labor force participation rates. Recent studies that examine retirement behavior of university faculty include Holden and Hansen (1989), Gustman and Steinmeier (1991,1994), Rees and Smith (1991), Smith (1991), Lozier and Dooris (1991).
4. The Kansas Regents universities are University of Kansas, Kansas State University, Wichita State University, Emporia State University, Fort Hays State University, and Pittsburg State University.
5. Totaling these percentages do not equal 100 percent because an additional "other" category was included in the survey instrument to describe current university activities.
6. The Pr value represents Type 1 error or specifically for this situation there is a two percent chance of being wrong by asserting that faculty in the population from which this sample was drawn postpone or reduce expected retirement age in response to an expectation of a lower living standard upon retirement.

7. Gruber and Madrian (1995), p. 938 note that individuals in the age range 55-64 are three times more likely to self report health as "fair" or "poor" compared to the 25-54 age group.
8. "Missing work" was defined as could not come to campus (or work place) and carry out normal daily activities because of a health condition. In comparison, the average number of work days missed by the individuals aged 18 and over in the total employed population was 2.85 days in 1992. By gender, work days missed were 2.51 and 3.25 for males and females respectively. See Silverman, et. al., Table 12.4, p. 439, 1995).
9. Anderson and Burkhauser (1985) argue that the insignificance of earnings on the retirement decision may result from treating a health variable, typically included as an independent variable in the model as exogenous. They suggest that health may be an indogenous or choice variable. In other words, an individual makes choices with respect to diet, exercise, smoking, use of drugs, etc. that affects one's health state similar to making work/leisure choices. Therefore, if the preference for good health is correlated with the preference for work, "then the estimated impact of health on retirement may be too large, and the estimated effect of wages on retirement may be too small" (p. 316).
10. Quinn (1978) found that health status influences a worker's perception of the work environment with men in poor health being more sensitive to job attributes that lead to the formation of work attitudes.
11. When faculty were asked to state their reason(s) for retirement, categories were not provided to check off. Their written responses were then categorized. Thus, in addition to explicit statements of job dissatisfaction, expressions such as 'do not like university policies,' 'poor students,' 'poor salary increases,' 'ultra sensitive sexual harassment policies,' 'poor administrators,' etc. were classified as job dissatisfaction.
12. The responses (Table 9) were grouped in two 'like work' or 'dislike work' categories and then regressed on expected retirement age. Neutral responses about working were placed in the 'dislike' group. If switched to the 'like' group or even omitted the results remain basically the same.)
13. Kansas Regents faculty are required to participate in one of several retirement plan options.
14. A normalized coefficient removes any scale attributes of a variable. It indicates the effect of a one standard deviation change of an independent variable on estimated retirement age.
15. The comparison group is the 33 colleges and universities from the Reese and Smith (1991) study.

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