Faculty Turnover And Salary Compression In Business Schools: Comparing Teaching And Research Missions

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Abstract

Excessive employee turnover has plagued industry and higher education, increasing the cost of manufacturing a product, delivering a service or providing quality education. Most research conducted in this area has concentrated on industry. The few studies that have investigated turnover in higher education were done at the university level while this paper focuses on faculty turnover in business schools. Another difference that distinguishes this paper is that actual turnover figures were used, rather than intentions to leave. Salary compression was also explored, an issue that concerns many faculty members. This occurs when new doctorates are hired at salaries almost equal to that of existing faculty. Our research found that turnover rates are higher in small, teaching institutions, as anticipated. An unexpected result was that salary compression was greater in one of the research institutions. This may be due to abnormal hiring practices of that school.

Introduction

A competent faculty is central to institutional vitality and effectiveness (Clark 1987; Clark and Lewis 1985; Finklestein 1984.) The process of recruiting and retaining appropriate individuals is expensive and time consuming. A successful faculty search process culminates in the retention of a faculty member whose personal and professional goals are consistent with the mission of the university.

In most universities a faculty search commit-

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tee is formed to screen initial applications and select a list of qualified candidates to be considered. This represents a substantial investment of valuable faculty time. The second phase commences with preliminary interviews of a number of viable candidates. This produces a final list of qualified candidates for on-site interviewing. As most institutions of higher education have limited resources, the applicants are invited sequentially until a final candidate is selected. If the candidate accepts an offer for employment the process is complete. If not, the committee continues to invite applicants, one at a time, until the position is filled. When this process is repeated each year for multiple positions, both

faculty and the administration consume a tremendous amount of time. Student-contact time, individual research agendas and classroom preparation suffer as a result.

Employee turnover has been extensively researched in industrial settings: however, there are few recent studies of faculty turnover in higher education. Those have been conducted at the university level and have focused on the respondents' job satisfaction. For example, Hinsz and Nelson (1990) compared four models of turnover intentions, surveying faculty from a state university in the upper Midwest. They found that attitude and subjective norm, from Fishbein and Ajzen's (1975) reasoned action model, accurately predicted turnover. Using the Carnegie Foundation's data from 190 institutions, Smart (1990) proposed a causal model to assess the influence of individual attributes and organizational characteristics on intentions to leave.

In contrast to the work of Hinsz and Nelson (1990) and Smart (1990), in which turnover intentions of faculty members were examined, we analyze actual faculty turnover. Our research also differs in that it is specific to business schools; previous research used data from colleges of liberal arts, fine arts, education, etc. We compare three business schools to determine whether faculty turnover differs among institutional settings.

In the 1970's and 1980's two hiring practices began that startled and dismayed university professors. The first practice was when new doctorates were hired at a salary almost equal to that of existing faculty. This phenomenon became known as "salary compression." The second disturbing practice was "salary inversion." In universities where salary inversion occurred, new assistant professors were offered salaries *greater than* that earned by existing assistant professors and sometimes almost equal to that of associate professors (AACSB Annual Salary Survey 1986.)

Studies of salary compression and inversion have used both self-reported salaries (e.g. Gomez-Mejia and Balkin 1987) and those that used empirical data from university operating budgets (e.g. Glandon, Mesak and Pullis 1996.) Gomez-Mejia and Balkin (1987) surveyed business faculty at six campuses in Minnesota and Wisconsin. All of the universities and colleges were public institutions with teaching missions. They found that new hires earn more on average than existing faculty at the same rank.

In their cross-sectional study of all colleges at two universities, Glandon, Mesak and Pullis (1996) found that length of service had a negative impact on faculty compensation. This negative relation was discipline-specific, with salary inversion restricted to the business school at one of the universities.

Salary compression and inversion send the message that length of service, institutional knowledge, and loyalty to the university are not important and need not be rewarded. Because of the negative signal that is sent to existing faculty, we anticipated that faculty turnover would be greater in schools where there was evidence of salary compression and/or inversion.

Methodology

Operating budgets of three business schools in three southern states for the ten-year period 1987 through 1996 provided data for the study. Data collected on faculty members included gender, rank, tenure, and annual salary. The three colleges were identified as large, medium, and small, based on total university enrollment. The small college has a stated teaching mission and is located in a rural setting with a total university enrollment of approximately 3,800 students. The medium-sized college is part of a research oriented, doctoral granting institution with a student population of approximately 10,000 students. The large college is a research oriented, doctoral granting institution with over 20,000 students located in an urban setting.

Two additional variables were developed. Faculty Turnover (TO) was computed as follows: the total number of faculty who left each year (referred to as "Leavers") was divided by the sum of remaining faculty plus new hires. Tenure track and non-tenure track faculty were included in this measurement; part time, adjunct faculty were not. This method provides a conservative measure of average total full time faculty as well as allowing us to observe any changes over the 10-year period. (n = Large 1100, Medium 536, Small 220.)

To measure the compression (or inversion) of tenure track faculty salaries, a compression index (CI) was created. Gomez-Mejia and Balkin (1987) used both a "within-rank" salary compression measure and an "overall" salary compression measure. We were restricted to an overall salary compression index because, in several instances, no new faculty were hired in certain classifications. For those years that no tenure-track faculty were hired, the index was categorized as "N/A." This affected 3 years for the small school and 5 years for the medium-sized school. (n = Large 765, Medium 255, Small 153.)

Hypothesis Development

Academic research is the primary determinate for tenure and promotion in most institutions of higher education. The definition of academic research and institutional expectations can differ substantially among universities. Research institutions have a mission of producing a high level of academic research that contributes to the prestige and reputation of the institution. Doctoral granting institutions expect faculty to regularly publish in top tier academic journals with tenure and promotion decisions based on the quality of the publication record. The highest salaries and most promising career paths are found in these institutions. Faculty who are unable to meet these institutional expectations will normally seek out a university that has a more liberal interpretation of academic research.

In smaller, so-called "teaching" institutions the definition of academic research involves a broader interpretation. Research may involve writing for practitioner journals and other publications with an applied or educational orientation. The stated mission of the institution is teaching, with the research component a secondary consideration in the tenure and promotion decision-making process. Institutional expectations focus on teaching and research as it affects classroom teaching.

We expected to see greater faculty turnover at the teaching university than the two research institutions. Smaller schools typically are unable to offer salaries that are comparable to those of larger schools. Faculty are motivated to seek out better opportunities at larger, higher-paying institutions or in industry. Furthermore, the teaching load both in number of classes taught and number of class preps usually is greater at small schools. To test this proposition, Hypothesis 1 states that faculty turnover (TO) for the small college of business is greater than for the other two schools:

$$H_1 : TO_{sm} > TO_{lg} , TO_{med}$$

The second hypothesis concerns the determinants of faculty turnover. As discussed in the previous paragraph, salary and institutional mission are expected to affect turnover. Smart (1990) found that tenure and gender influenced intention to leave the institution. We believe that certain other variables may affect turnover and should be included in the regression model: Trend, Rank, Terminal Degree (TermDeg), and Administrative duties (Admin). Each variable is described in greater detail in the Model section.

$$H_2: \quad TO = Trend - School + Gender + Rank - Tenured - TermDeg - Salary - Admin$$

As stated earlier, salary compression/inversion occurs when new faculty are offered a salary almost equal to or greater than that

earned by existing faculty. The salary compression index (CI) was computed for each school as described in the Methodology section. In the medium-sized school, existing faculty members had filed suit against the administration because of perceived salary compression. Although we were uncertain whether salary compression existed in the other two schools, we expected it to be more prevalent in the medium-sized school. This resulted in the following hypothesis:

$$H_3: CI_{med} > CI_{sm}, CI_{lg}$$

The next two hypotheses examine TO and CI from a university mission perspective. School size and mission are correlated; therefore Hypothesis 4 is expected to have similar results as Hypothesis 1. In other words, TO of the teaching school is expected to be greater than TO of the research schools. Hypothesis 4 is stated as follows:

$$H_4: TO_{teach} > TO_{research}$$

In a similar fashion, Hypothesis 5 is expected to be comparable to Hypothesis 3:

$$H_5: CI_{research} > CI_{teach}$$

Models

An analysis of variance (ANOVA) model was used to examine the differences between schools for Hypothesis 1 and 3 and between missions for Hypotheses 4 and 5. A regression model was used to determine attributes that might help predict turnover (Hypothesis 2). In addition to faculty turnover (TO) and salary compression (CI) described above, other variables of interest include:

Trend: Each year was assigned a number: 1987=1, 1988=2, etc. This would allow us to determine whether time affected the dependent variable.

School Size: The three universities are coded as small (1), medium (2) and large (3). The coefficient is expected to be negative; suggesting that schools (2) and (3) have less

turnover than school (1).

Gender: Male = 1, Female = 0. Smart (1990) found that male faculty members were more likely to leave; therefore, the coefficient is expected to be positive.

Rank: Faculty rank is categorized as full professor (1), associate professor (2), assistant professor (3), or instructor/lecturer (4). Faculty with less seniority (i.e. usually assistant professors and instructors) are expected to leave institutions more frequently; therefore, the coefficient is expected to be positive.

Tenured: Tenured = 1, Non-tenured = 0. Non-tenured faculty are expected to be more likely to leave the institution, suggesting that the coefficient will be negative.

TermDeg: Terminal Degree = 1, No terminal degree = 0. Those faculty members that possess a terminal degree are less likely to leave; the coefficient is expected to be negative.

Salary: Nine-month salaries for each faculty member. Higher salaries are expected to encourage individuals to remain at their place of employment, *ceteris paribus*. The coefficient is expected to be negative.

Admin: Administrative duties=1, No administrative duties = 0. Individuals with administrative duties might be expected to have a longer tenure at the institution; therefore, the coefficient is expected to be negative.

Mission: Research=1, Teaching=0. The primary mission of the smaller college is teaching. Both of the larger institutions are considered research schools, although the size of the institution and its mission may be interrelated.

Results

Descriptive statistics for the three business schools are presented in Table 1. This information describes the composition of the faculty of each college.

Table 1

	Large (All Faculty N=1100 Tenure Track N= 765)	Medium (All Faculty N=536 Tenure Track N= 255)	Small (All Faculty N=220 Tenure Track N= 153)
Faculty composition by gender:			
Males	74.1%	83.8%	68.5%
Females	25.1%	9.1%	25.8%
Unknown	1.1%	7.1%	5.9%
Faculty composition by rank:			
Full	26.4%	40.8%	6.5%
Assoc	27.8%	30.7%	21.6%
Asst	15.2%	18.8%	46.9%
Other	30.6%	9.6%	25.1%
Faculty composition by terminal degrees:			
	67.3%	84.8%	54.1%
Faculty composition by tenure:			
	53.3%	74.9%	22.2%

The descriptive statistics in Table 1 offer some insight into each school. For example, almost 84 percent of the faculty of the medium-sized school is male, compared with 74 percent at the large school and 69 percent at the small school.[1]

The category of "Unknown" results from a faculty position that is unfilled at the time the university budget is completed. The rank and type of degree can be specified when the position is listed; it would not be possible to know beforehand whether a male or female applicant would be employed. Whenever possible, we have verified the gender of the new employee using other sources of information.

Faculty composition with respect to rank shows that the small, teaching oriented college has a larger percentage of faculty at the lower ranks. This is consistent with the thesis of this paper, that these institutions will have greater faculty turnover. Newer faculty will most likely be hired at the assistant or associate levels. Surprisingly, almost 41 percent of the faculty at the medium-sized school are full professors, compared with only 26 percent at the large school

and 6.5 percent at the small school. Further discussion of this phenomenon follows in the Results section.

Finally, a larger percentage of faculty at the medium-sized school possessed terminal degrees and had earned tenure.

Table 2 presents the results of H_1 and H_2:

There is a reliable difference in faculty turnover between the smaller college and the other two larger colleges at $\alpha = 0.10$. The mean annual faculty turnover rate for the small college is 22%, while it is approximately 12% for the other colleges. This is consistent with our observations and expectation and H_1 is supported.

H_2 is also supported. As illustrated in Table 2, the regression model indicates that overall turnover (TO) decreased over time. Also, the School variable was significant, confirming the results from H_1. As expected, instructors and assistant professors are more likely to leave than full and associate professors. The Administrative Duties variable also is significant ($P > T = 0.0021$); however it does not have a strong influence on turnover (coefficient $= 0.00005$). Gen-

Table 2

	Large	Medium	Small
(H_1:) Mean turnover percentages:	12.5%	12.7%	22.0% **

(H_2:) Regression results of TO:

Prob > F = 0.0001   Adjusted R^2 = 15.80%

Variable	Coefficient	Prob > |T|
Trend	-0.00674	0.0001
School	-0.03678	0.0001
Gender	-0.00166	0.7210
Rank	0.11386	0.0004
Tenured	0.00981	0.0867
TermDeg	-0.00000	0.1864
Salary	0.00000	0.4002
Admin	0.00005	0.0021

** Statistically different at 0.10, from other schools

Table 3

	Large	Medium	Small
(H_3) Mean salary compression index:			
	108.1%	80.6% *	97.4%

* Statistically different at 0.05 from the large school

der, TermDeg, and Salary were not significant. Finally, the Tenured variable was significant at 0.0867, although it only affected turnover by less than 1 percentage point (0.00981).

Table 3 illustrates the results of the salary compression index. There is a statistically significant difference at α= 0.05 between the largest and medium-sized schools, supporting H3. There was no difference between the large and small colleges, or between the medium and the small colleges. To understand these results, further examination of the data from the medium-sized college was necessary.

This particular college has a demonstrated problem with salary compression. Several senior faculty members have filed suit against the school for issues directly related to salary compression. Between 1987 and 1991, a number of faculty members were hired as full professors with tenure. This is an abnormal hiring practice. Typically, faculty are hired as assistant or asso-

ciate professors with some waiting period before they become eligible for tenure. A second aberration in the data indicates that there were no new faculty members hired between 1991 and 1996. This also does not reflect what we would expect to be a typical annual cycle of hiring. Finally, the total number of faculty employed by this particular college of business declined by 25 percent between 1987 and 1996, which suggests that the program is declining. For these reasons, one must be careful in generalizing the results of this study to other institutions.

The final analysis is contained in Table 4. The data are reorganized to reflect the stated mission of the respective colleges. The larger and medium-sized colleges have a stated mission of research and the smaller college considers itself a teaching school. We wanted to determine whether these diverse missions had any effect on the analysis.

With respect to annual faculty turnover,

Table 4

	Research	Teaching
(H4) Mean turnover percentages:	12.6% *	22.0%*
(H5) Mean salary compression index:	98.9%	97.4%

* Statistically different at 0.05

combining the two larger institutions does not affect the results. There remains a statistically significant difference between the smaller, teaching college and the other two schools, supporting H4.

In comparing the data by college mission we find that there is no difference between research institutions and teaching institutions at the $\alpha = 0.10$ level of statistical significance. H5 is not supported. In examining the salary compression variable from this perspective we find that the data from the largest school has a counterbalancing effect on the data from the medium-sized school.

Conclusion

The results suggest that faculty turnover in the smaller, teaching college is greater than either of the larger institutions. More than one-fifth of the faculty are replaced on an annual basis. This is consistent with our observations and expectations. For many of the reasons that we stated earlier, smaller, teaching colleges must continue to commit a disproportionate portion of their limited resources to the annual faculty search process.

The role that salary compression plays appears to be confounded by our data. The medium-sized college has an average salary compression index of 80.6%, which is significantly lower than either of the other colleges. The unique circumstances at that school may limit the generalizability of the findings. Instead of a consistent pattern of hiring, this school hired a relatively large group of tenured, full professor

faculty prior to 1991. For the subsequent five-year period no new faculty were hired. Although unusual, it is unlikely that such hiring practices are completely unique to this school. It would be interesting to see whether this is a widespread phenomenon and an area for future research.

There is no reliable difference in salary compression between the largest and smallest institutions. Our tentative conclusion would be that salary compression does not appear to have an effect on faculty turnover.

In examining the data by college mission, faculty turnover is much greater in the teaching school than the research schools. It is unclear from the data whether this is a function of mission or the size of the institution because it is difficult to untangle those variables. Salary compression is no longer different when we examine the data by college mission because the data from the medium-sized college counterbalances the data from the largest college. Again, these data may be unique to the college and time period studied.

Limitations and Contributions

As with most empirical studies, this one has some limitations. We believe that the following summary delineates most of them. Rather than using one time period to compare the three business schools, we chose to use a 10-year time period. This avoided possibly selecting a year that may not have been representative of a university's hiring practices. We felt that using a 10-year average provided a more accurate portrayal

of faculty turnover and possible salary compression. However, this condenses the data and we may have lost important information that might have changed our results. Another limitation is that the regression model only explained 15.8% of the variance in predictions of faculty turnover. Certainly, other attributes contribute to this phenomenon although that information may not be available from our data source (university budgets). Smart (1990) postulates that his results of 13% and 14% explained variance are consistent with previous research. The computed compression index could be affected by discipline. Typically, new faculty compensation is discipline specific. It was not possible to control for disciplines because each institution is organized differently. Finally, it was not possible to use the compression index as a predictor of turnover because of the differences in how those two measurements were created. Compression index may be an important predictor of faculty turnover.

This study has made two contributions to research on faculty turnover and salary compression in higher education. We have used actual salaries and actual turnover in business schools. Earlier research used self-reported salaries and turnover intentions. Additionally, a more comprehensive data set than used in prior research was utilized. Ten years of data for three schools reflects the general trend of events, reducing the risk of selecting a particular year that may be a departure from normal salaries and turnover.

Suggestions for Future Research

This study compares business schools located in three southern states. Each school was unique in size (small, medium, large.) Our results may be driven by geographic location or unique characteristics of the institutions examined. Future research should focus on expanding the pool of institutions to determine whether the findings are consistent on a national basis. It might be useful to examine the results in relation to averages published by the International Association of Management Education (formerly known as the AACSB). This could pro-

vide valuable information regarding overall trends in higher education.▥

Endnotes

1. Note: Gender is not specified in the operating budgets. The gender designation was based on the faculty member's first name or the personal knowledge of the researchers; therefore, the results must be interpreted with caution.
2. The business school was reaccredited by the AACSB in 1991.

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