

Derivation of New Measures For Retention

Pamela M. Williams (Student)
Saint Louis University
226 Morton Drive
Quincy, IL 62301
(217)224-4333
PamW@Compuserve.com

Jerome A. Katz
Saint Louis University
Department of Management
3674 Lindell Boulevard
St. Louis, MO 63108
Office: (314) 977-3864
Home: (314) 275-8721
KatzJA@slu.edu

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Abstract

Employee retention is a fundamentally different approach from employee turnover. However, while turnover ratio has been used as the gold standard of personnel changes it does not adequately embody the complex situations facing SMEs today. In order to discuss these situations and their effect on retention, dependent variables must be created by which to measure retention. Thus new variables and equations are proposed which capture many of the dynamic personnel situations organizations face today. Sample situations are offered to demonstrate the value of the new variables to researchers and policy makers.

Introduction

There is a worker shortage today, and future prospects are even worse. In January 1998 the Bureau of Labor Statistics reported that unemployment was at its lowest level in eight years, 5 percent, and economic growth was up by 4 percent (Hansen 1998). And, while in 1996 1.5 million new jobs were created by small businesses, a 20 percent drop in the general population's birth rate a generation ago has produced a shortage of new workers. Add to this that 50 percent of the 4,000 US managers polled by Management Recruiters International plan to increase their staff size in 1997 and 1998 (Chemical Market Reporter 1998). Facing such a shortfall, retaining current employees becomes the obvious first-line strategy of all businesses, but especially small to medium enterprises (SMEs).

When an employee leaves an SME the effects can be devastating. Because each SME employs fewer numbers of employees, each employee constitutes a larger percentage of the workforce and thus can have a larger effect on the corporation (Gatewood and Field 1987). Moreover, Deshpande and Golhar's (1994) findings suggest that in SMEs an employee may be the only person, other than or including the owner, who is trained to perform certain functions. Thus, the loss of that employee will leave the SME with a large hole to fill. At times this may mean the owner has to step in and temporarily fulfill these duties while recruiting, selecting, and training a new hire.

The upshot of this is that retention is vitally important to SMEs and their owners, and thus of concern to researchers and policymakers. Ironically, however, the study of retention as a factor in research and policy is in its infancy. As yet, it is not even clear what a measure of retention would look like. Such measures would be essential. For SME owners and policymakers measures become a way of considering and evaluating retention objectively. For researchers, the form a dependent variable takes can have significant impacts on the ease, cost, reliability, validity and generalizability of the resulting measures and findings.

Readers might suggest that retention measures exist from the turnover literature, or the obverse of turnover measures. But retention, we will contend, is not the reverse or obverse of turnover. We will review turnover research below and show the lack of widely accepted retention

measures in research. Then we will present various methods by which to measure retention and the benefits of doing so. Finally we will discuss areas for improvement and avenues for further research.

Background

Turnover

Employee turnover has been the gold standard of measurement when it comes to evaluating organizational changes in personnel. Employee turnover is measured by turnover ratioⁱ—the percentage of employees who have left an organization.

Turnover ratio is the standard measure taught in most textbooks (e.g. Cherrington 1995) and used in most quantitative studies (e.g. Hansen 1997, Fitz-enz 1997, Pinkovitz, Moskal & Green 1996). The turnover ratio is a percentage showing how many employees have left a company during a specified time period. Some studies have gone so far as to calculate standard turnover rates for the country. Pinkovitz, Moskal & Green show that the average annual employee turnover rate for all US companies is 12%. They also cite a 1996 Wisconsin study which shows 75% of demand for employees is due to employee turnover (1996).

Regardless of scope, turnover ratios have certain limitations when applied to retention, and these are discussed later.

Retention

Showing how early is the stage of retention research today, retention studies do not have the same convergence of measurement that is evident in turnover studies. Most retention studies so far have been normative or conceptual in nature and have lacked quantitative measuresⁱⁱ.

The use of quantitative measures in retention studies is sporadic and studies which do use calculations fall back on turnover variables such as turnover ratio or the hazard function which describes the probability of turnover during a period of time (Morita, Lee & Mowday 1989) which is again based on the turnover ratio and not an independent measure of retention.

Chachere, Katz and Williams have argued that rather than approach the issue from the traditional perspective of turnover it is more valuable to look at the issues from the positive perspective of employee retention. They suggest that by viewing employees as a capital investment, rather than an expenditure, organizations can take a more positive and pro-active strategic role in retaining employees (1998).

Chachere and Williams took this idea further and presented a pro-active model of employee retention. They argued that a pro-active stance by the organization increases employee commitment to the organization and results in higher retention levels (1998). These higher retention levels, in the form of increased employee tenure, should be followed with consistent

role performance and ultimately lead to the innovative behaviors necessary for organizational survival as shown in Katz and Kahn (1978).

Accepting this idea for the sake of argument, it follows that turnover measures would not adequately convey information about retention, and new dependent variables to measure retention are needed. The following section operationalizes this idea.

Formulations

Traditionally, when researchers or practitioners wanted to see how stable the personnel situation is in a given organization they have used a common formula for Turnover.

$$T = \frac{\text{\# of employees who have left an organization}}{\text{\# of employees who are in the organization}} \times 100 \quad \text{eq. 1}$$

The maximum T would be $T=\infty$ if all employees in an organization were constantly changing. If all employees in the organization stayed then $T=0\%$. However this formula, though simple to calculate and understand, does not adequately represent complex changes in organizations today. Incorrect hiring decisions, when corrected, can give the false impression of a very volatile personnel situation.

A more telling figure might be a retention rate. By measuring the stability of positions, rather than changes in persons, we can more easily assess the true organizational impact of employee turnover. In equation 2 a retained employee is one who was in a position at the beginning of the time period and remained in that position until the end of the time period.

$$R = \frac{\text{\# of retained employees}}{\text{\# of positions in the organization}} \times 100 \quad \text{eq. 2}$$

Again the maximum for this variable would be $R=100\%$ representing that all employees were retained in their current positions. If all employees left the organization, or changed positions, the minimum $R=0\%$. At first it may seem that this is just the opposite of Turnover rate. That is true for simple situations such as the one given below in Situation 1. However, in complex situations we will see that the correct relationship between Turnover and Retention is

$$R \geq 100 - T \quad \text{eq. 3}$$

To demonstrate this we shall create a mock organization shown in the Appendix. Company ABC shall be assumed to be a small organization with a few owners and 18 employees in two departments. For each position in the organization this table shows to which department a position belongs, an employee's tenure with the organization, how long the employee has been in the position, their previous position, and the length of time in the previous position.

Situation 1: The Sales Department

As shown in the Appendix no employees have left or entered the sales department in the past year. Thus

$$T = (0/8) \times 100 = 0\%$$

And $R = (8/8) \times 100 = 100\%$

This shows a very stable department with no personnel changes. In this situation it is not obvious why either measure would be preferred over the other. However, in a changing environment the results will be different.

Situation 2: The Shipping Department

Using the Appendix we assume that two people in the shipping department left and were replaced.

$$T = (2/8) \times 100 = 25\%$$

And $R = (6/8) \times 100 = 75\%$

However, sometimes it happens that an incorrect hiring decision is made and that the incorrect hire may quickly be replaced again. If we assume that the two positions became vacant, were filled incorrectly, and those personnel were also replaced, the numbers tell a different story.

$$T = (4/8) \times 100 = 50\%$$

And $R = (6/8) \times 100 = 75\%$

Thus a higher turnover ratio shows a much more volatile situation. A person unfamiliar with the situation could reasonably assume that half of the personnel in the department left the organization. Where the actual situation shows that only two positions ever changed hands.

Another situation can arise which is not adequately explained by turnover—the simple occurrence of promotion. In these situations an employee will leave one position in the organization for another, perhaps in another department. In this situation Turnover and Retention rates may not show the total picture. However, another variable may be useful—that of Duration.

$$D = (\sum l_n) / N \tag{eq. 4}$$

Where: N = the total number of employees
 l_n = the length of tenure of employee n in the organization

And $\Delta D = D_{t1} - D_{t0} \tag{eq. 5}$

Where: $t1$ = the current time period
 $t0$ = the previous time period
 ΔD = the change in duration between time periods

Duration, D , can range from a minimum of 0, when a company has all new employees, to a maximum of X , where X is the amount of time the organization has existed. When compared to the Duration calculation of the previous period ΔD can be positive or negative. A positive ΔD

means that the amount of experience employees have in an organization is increasing. A maximum ΔD of 1 would show that all employees stayed in the organization for another year. A small negative ΔD will occur when a relatively inexperienced employee is lost. If a long tenured employee is lost the ΔD variable will suffer more.

Situation 3: Promotion

As the Appendix shows there was an employee who spent the current time period in the Sales Department. However, that employee was previously in the Shipping Department. Assuming that his promotion was the only change to either department during this time period the variables for the time period would show

$$T_{\text{shipping}} = (1/8) \times 100 = 12.5\%$$

$$R_{\text{shipping}} = (7/8) \times 100 = 78.5\%$$

These calculations show that all but one of the shipping employees were retained in the Shipping Department. But by adding Duration (owners excluded) the picture becomes a little clearer.

$$D_{1998} = [(22+20+10+10+8+3+11+5+2) + (7+13+8+4+3+2+2+2+2)] / 18$$

$$D_{1998} = 7.44$$

$$D_{1997} = [(21+19+9+9+7+2+10+4+1) + (6+12+7+3+2+1+1+1+1)] / 18$$

$$D_{1997} = 6.44$$

$$\Delta D = 7.44 - 6.44 = 1$$

Thus by adding the Duration variables it becomes clear that while all employees were not retained in their original positions, they were retained within the organization—a positive situation for the organization.

Discussion

Turnover and retention are often naively considered as opposite concepts, but we contend they are not opposite measurements. As the situations in the previous section show, one measurement is not the numeric reverse of the other. This is because at a fundamental level turnover and retention are substantially different concepts, have substantially different definitions, and therefore require substantially different operationalizations.

Turnover ratio is the percentage of employees leaving the organization. This term is as simple to calculate as it is to interpret and use. However, it does not account for complex situations such as promotions, which are beneficial to the organization, nor for problematic hiring in one position of an organization.

Studying the concept of retention is studying people staying within an organization. However, complexities arise because there is more than one way an employee can stay within an organization. Retained employees can stay in their current position or change positions. The

first case represents stability in the organization while the second represents a change which can affect and possibly temporarily destabilize an organization.

Equations 2 and 5 in the previous section of this paper add to the current method of simply measuring turnover. By combining the two they account for previously unmeasured factors. The retention ratio (eq. 2) takes into account problems such as rapid turnover in a single position. This could be due to wrong hiring decisions or an inappropriately designed position within the organization.

Adding the measurement of ΔD (eq. 5) would allow practitioners and researchers alike to determine how devastating an employee loss is. This measurement can highlight large losses of employee experience—a figure which goes well beyond determining the traditional monetary costs of employee turnover.

Conclusion

Many sources suggest that there is a movement toward studying retention. However, discussions about retention will not be able to progress without a common thread of understanding of the definitions. To this end generally accepted models and measures of retention have to be built. It is our hope that the equations presented in this paper will be used as a foundation for this development and will be expanded on in future research.

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Appendix

Company ABC at end of 1998

Position	Employee	Organizational Tenure	Positional Tenure	Previous Position	Previous Pos. Tenure
President	Owner 1	27	27		
Vice President	Owner 2	8	8		
Secretary	Owner 3	25	25		
Treasurer	Owner 4	9	9		
Sales Manager	Employee A	22	22		
Salesperson	Employee B	20	15	Shipping Mgr.	3
Salesperson	Employee C	11	2	Shipper	9
Salesperson	Employee D	10	10		
Salesperson	Employee E	10	8	Shipper	2
Salesperson	Employee F	8	8		
Salesperson	Employee G	5	2	Shipper	3
Salesperson	Employee H	3	3		
Salesperson	Employee I	2	1	Shipper	1
Shipping Mgr.	Employee J	7	3	Shipper	4
Shipper	Employee K	13	13		
Shipper	Employee L	8	8		
Shipper	Employee M	4	4		
Shipper	Employee N	3	3		
Shipper	Employee O	2	2		
Shipper	Employee P	2	2		
Shipper	Employee Q	2	2		
Shipper	Employee R	2	2		

ⁱ The second popular quantitative turnover measure is that of turnover cost. This measurement is not about who is leaving the organization nor about the stability of the organization, but about the monetary and non-monetary costs to the organization once employees leave.

Turnover costs are measured in various ways. Hansen (1997) reports organizational costs as a percentage of the departing employees pay. Using standard ratios for exempt and nonexempt employees, their salaries, and the number who have actually left one can then calculate the annual cost of turnover to the organization.

Fitz-enz (1997) also demonstrated how to calculate the organizational cost of turnover by calculating four figures ¹the cost of termination, ²the cost of hiring and training, ³the vacancy cost while the job remains unfilled and ⁴the loss of productivity with a new hire.

No matter how simple or complex the calculations for turnover costs they all share one calculation—turnover ratio.

ⁱⁱ Most retention studies to date fall in to the category of “Guidelines”. For example Hacker (1997) provides advice on personnel screening and selection. By improving these techniques, she contends, it is possible for managers to make quality decisions which will result in employees staying with the organization longer. Other “Guideline” studies focus on using aspects of the job or organization to improve employee retention. For example Wood (1997) recommends working with employees to develop mutual expectancies and creating a pleasant organizational climate while Conroy, Caldwell, Buchrer and Wolfe (1997) recommend the use of flextime as a low cost method of meeting the diverse needs of today’s workforce.

There is also a small contingent of theoretical retention studies which focus on the organizational benefits of long term employee/employer relationships. Developing these more stable, long term relationships with employees has been shown to be an important factor to organizational success (Huselid 1995, Schwab 1991, Vecchio 1985). Stichweh (1993) goes so far as to state that employees are the best source of sustainable competitive advantage.

However, the problem is that there are not accepted variables to test these studies. In fact, there is not yet an accepted model of employee retention to test.