

A Longitudinal Test of the Investment Model: The Impact on Job Satisfaction, Job Commitment, and Turnover of Variations in Rewards, Costs, Alternatives, and Investments

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A longitudinal study of moderately professionalized technical workers was conducted to test a variety of investment model (Farrell & Rusbult, 1981) predictions concerning the determinants of job satisfaction, job commitment, and turnover. In general, greater job satisfaction resulted from high job rewards and low job costs, whereas strong job commitment was produced by high rewards, low costs, poor alternative quality, and large investment size. Whereas the impact of job rewards on satisfaction and commitment remained relatively constant, job costs seemed to exert an increasingly powerful influence over time. Investment size, too, was shown to exert greater impact on job commitment with the passage of time. Just prior to their leaving, the job commitment of employees who left was best predicted by a combination of rewards, costs, and alternatives. Employees who stayed and those who left were shown to differ from one another with regard to changes over time in each investment model factor—those who left experienced greater decline in rewards, increase in costs, increase in alternative quality, and decrease in investment size than did those who stayed. Turnover appeared to be mediated by a decline over time in degree of job commitment.

What causes job turnover? Why do some people develop strong commitment to continue at their jobs, while others fail to do so and quit their jobs? Two recent reviews of the literature on employee commitment and turnover concluded that although these phenomena have received considerable attention, and despite significant advances in our understanding of these phenomena, much remains to be explored (Mobley, Griffeth, Hand, & Meglino, 1979; Mowday, Porter & Steers, 1982). Prominent among their recommendations was a call for the development

of process-oriented theories of turnover, as well as for longitudinal research, particularly multivariate and integrative research.

Theories of the turnover process address the psychological experiences and choices individuals confront as they continue in or withdraw from an organization. The first such model (Rice, Hill, & Trist, 1950), tracing new entrants, outlined three main phases in the turnover process: induction crisis, differential transit, and settled connection. Using equilibrium theory, March and Simon (1958) developed a comprehensive turnover-participation model, including as key decision variables perceived desirability of movement, perceived possibility of intraorganizational transfer, and perceived ease of movement. Price (1977) utilized a psychological process model similar to that of March and Simon and extended this literature by introducing a variety of sociological variables describing organizational conditions (e.g., centralization, co-worker integration, formalization). Steers and Mowday (1981), echoing and extending the March and Simon approach, suggested a complex, 13-stage model of the process of voluntary em-

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ployee turnover. Their model includes as antecedents of turnover variables such as individual expectations, job experiences, affective responses to jobs, non-work-related influences, intentions to stay, search for alternatives, and availability of alternatives. All of these theories imply changes over time in model variables, but model tests tracing the experiences of a cohort through repeated measurement have not been conducted.

Although these process theories have not been thoroughly tested, the need for longitudinal analysis of the turnover process has not been overlooked. Mobley et al. (1979) developed a comprehensive process model of voluntary employee turnover focusing on intentions (i.e., intention to search, intention to quit) as the immediate psychological precursors of individual turnover. Preliminary tests of their model highlight the importance of declining continuation intentions for both employees who leave early and those who leave later (Youngblood, Mobley, Meglino, Laughlin, & Baker, Note 1). In addition, for those who leave early, turnover decisions appear to be influenced by level of attraction to the job role and perceived likelihood of finding an acceptable alternative job. Porter, Crampon, and Smith (1976) also examined the process of employee turnover. In a study of managerial trainees, they found that organizational commitment—the willingness to put forth extra effort, the desire to remain, and the acceptance of the goals and values of the organization—began to decline in the months prior to termination for those who left, whereas those who stayed reported nearly constant levels of commitment.

Since longitudinal tests of process-oriented models of turnover are rare, the present research was designed to complement past theory and research by using the investment model, an integrative yet parsimonious theory of job commitment and turnover (Farrell & Rusbult, 1981). The model extends some basic principles of interdependence theory (Kelley & Thibaut, 1978; Thibaut & Kelley, 1959), uses traditional exchange theory constructs (cf. Blau, 1964, Homans, 1961), and subsumes many variables discussed in earlier process-oriented theories.

Briefly, the investment model asserts that job satisfaction (*SAT*), the degree to which

the individual positively evaluates his or her job, should be greater to the extent that the job offers high rewards (*REW*) and low costs (*CST*):

$$SAT = REW - CST. \quad (1)$$

The model suggests that job commitment is a more complex, multidetermined phenomenon. Commitment (*COM*) refers to the likelihood that an individual will stick with a job, and feel psychologically attached to it, whether it is satisfying or not. Acknowledging Mowday, Porter, and Steers' (1982) distinction between attitudinal and behavioral commitment, the present usage of this term includes both behavioral commitment and some elements of attitudinal commitment (i.e., desire to maintain a relationship, feelings of attachment). Job commitment is said to increase with increases in job rewards, decreases in job costs, increases in investment size (*INV*, resources inextricably connected to the job), and decreases in alternative quality (*ALT*, an alternative job, not working):

$$COM = (REW - CST) + INV - ALT \quad (2)$$

Finally, job commitment directly influences job turnover (*TURN*), with turnover resulting from decreases in level of commitment to the job:

$$TURN \approx COM. \quad (3)$$

Thus, declines in job rewards, increases in job costs, divestiture, or improving alternatives should lead to reduced job commitment, and in turn, job turnover. Although the investment model has been supported by research utilizing experimental and cross-sectional survey methodologies (Farrell & Rusbult, 1981), the temporal or process aspects of the model have not been longitudinally assessed. The immediate question, then, is this: In what ways do investment model variables change over time, and what impact do such changes have on job satisfaction, job commitment, and turnover?

First, it is logical to expect that job rewards (e.g., high pay, autonomy, variety) should be salient to workers even during early stages of a job, whereas the costs associated with a given job (e.g., unexpected variations in work load, numerous deadlines, inadequate re-

sources, unfair promotion practices) probably become more noticeable over time. Thus, whereas the impact of job rewards should remain relatively constant, the impact of job costs on satisfaction and commitment should increase over time on the job. Research on organizational entry provides indirect support for this assertion: The expectations of newcomers have consistently been shown to be more favorable than those of more experienced workers (Dunnette, Avery, & Banas, 1973; Schneider, 1972; Wanous, 1976). In fact, this notion—that jobs generally prove to possess greater costs than workers initially anticipate—forms the basis for work advocating realistic job previews (Wanous, 1975a; 1975b).

Second, the impact of investment should change over time. Investments in a job may consist of resources that are intrinsic to the job (e.g., years of service, nonportable training, nonvested portions of retirement programs), or resources that are extrinsic, but inextricably connected to the job (e.g., housing arrangements that facilitate travel to and from work, friends at work, extraneous benefits uniquely associated with a particular job). Since investments tend to accumulate over time, the impact of investments on job commitment should similarly increase over time; as the worker continues to invest resources in the job, it should become increasingly costly to abandon that job and lose invested resources, so the investment-commitment relationship should become stronger. Research on entrapment and the escalation of commitment supports this hypothesis: Individuals do seem to become increasingly reluctant to abandon a course of action with increases in investments and the passage of time (Aranya & Jacobson, 1975; Buchanan, 1974; Rubin & Brockner, 1975; Staw, 1976)

No predictions were made concerning temporal changes in the impact of alternative quality on commitment. Although an increase over time in the quality of a worker's job alternatives should promote decreases in the degree of job commitment, there is no reason to assume that changes in the quality of alternatives should occur in a systematic fashion over time across workers. Some people's job alternatives will improve with increases in skill and reputation over time, and

others' opportunities will decrease. Thus, no general trend toward changes in alternative quality was expected, nor were any systematic changes in the alternatives-commitment relationship predicted.

A 1-year longitudinal study of new employees was designed to test predictions derived from the investment model, an integrative process model of the determinants of job commitment and turnover. Specifically, this investigation was designed to address the following questions: First, do investment model variables effectively predict job satisfaction and job commitment for both employees who stay and those who leave, as specified in Equations 1 and 2 above? Second, are there significant changes over time in the ability of model variables to predict satisfaction and commitment?

Third, in what ways do investment model variables change over time for those who stay and those who leave? That is, are there differences between those who leave and those who stay in terms of whether their rewards, costs, and job-related investments increase or decrease and whether their alternatives improve or do not improve over time?

Fourth, what impact do changes in job commitment have on turnover? Does job commitment decline prior to turnover? Does job commitment directly mediate job turnover as specified in Equation 3 above? Each of these questions will be addressed in turn by the present investigation.

Method

Subjects and Procedure

Subjects were 88 newly hired employees in two professional service organizations: junior staff accountants of a well-known auditing firm in a large Eastern city ($n = 36$) and practical, registered, or baccalaureate nurses of a 500-bed hospital in a medium-sized Eastern city ($n = 52$). Initial contact with each subject within 2 weeks of entry into the organization was obtained through the cooperation of the employing agencies. A total of 136 employees contacted during the summer and early fall of 1979 were asked to participate on a voluntary and confidential basis. The return of the first questionnaire was to signify willingness to answer "several additional" questionnaires over the following 12 months (actually, subjects completed a questionnaire every 4 months). A total of 88 persons (65%) responded to the first questionnaire. The turnover rate was 32% for participants and 31% for nonparticipants, thus, participants and non-

participants did not appear to be significantly different with regard to the critical turnover measure

At each of four time periods, if subjects failed to respond to an initial typed letter and questionnaire, a second typed reminder letter and questionnaire were mailed, followed by a handwritten note from the experimenter. Among the 88 initial respondents, the response rates at Times 2, 3, and 4 were 93%, 91%, and 88% (these percentages are for employees who had stayed at each time, those who had left were excluded in calculating response rates). Responses were returned directly to the investigator in pre-addressed, stamped envelopes. Subjects continued to participate in the study until they (or company records) reported separation from the firm. Of the 88 persons who agreed to participate, 28 individuals, or 32%, voluntarily left the organization in the first year (9 at Time 1, 6 at Time 2, 9 at Time 3, and 4 at Time 4).

Because the two occupational groups—accountants and nurses—are structurally similar (i.e., moderately professionalized technical occupations), because the workers were demographically similar (i.e., similar educational levels, age distributions, and turnover rates), and because statistical analyses (reported below) revealed no substantial differences between groups, they were combined in the major analyses. The typical subject was 24 years old ($SD = 4.87$), had received 15.1 years of schooling ($SD = 1.9$), and had a starting income of \$10,900 ($SD = 3,700$). The sample was 61% female.

Questionnaires

The questionnaire employed in each of the four time periods of the study contained items designed to measure all elements of the investment model. Because it was anticipated that subjects would not easily be able to answer questions such as "What is the reward value of your job?" the abstract concepts of the model were "translated" into everyday language in the following manner (as in Farrell & Rusbult, 1981): (a) each investment model concept was briefly defined, (b) subjects answered specific concrete items intended as representative examples of the abstract concepts, and (c) subjects completed global or generalized items for each concept. Values for each set of global items were later averaged to form a single global measure for each variable in the model. These composite global measures were utilized in the statistical analyses; concrete items were included to enable subjects to answer global questions accurately and honestly. Except where otherwise indicated, responses used 9-point scales.

The absence of a specific job reward frequently implies the presence of a job cost (e.g., lack of monetary rewards implies a cost—low pay). For this reason, a single set of concrete items was used to teach the abstract reward and cost concepts. Thirty-one items assessed a variety of concrete aspects of jobs, including pay (10 categories), opportunity for promotion, routinization, formalization, autonomy, task identity, feedback, co-worker relations, job challenge, mechanization, work schedules, overtime, vacations, and physical surroundings. The full set of concrete items was used for the first and fourth time periods of the study. To limit the effort required of subjects, only alternating halves of 31 specific measures were used for the second and third times. At each of four times, three

global items assessed job rewards and three assessed job costs. "All things considered, to what extent are there good things associated with your job?" (1 = none, 9 = a great many), "In general, to what extent do you find your job to be rewarding?" (1 = not at all rewarding, 9 = extremely rewarding), "Does this job have more or fewer positive aspects than most people have at their places of employment?" (1 = job is worse than most, 9 = job is better than most), "All things considered, to what extent are there unpleasant things associated with your job?" (1 = none, 9 = great many), "In general, to what extent are there costs or hardships associated with your job?" (1 = not at all costly, 9 = extremely costly), and "Does this job have more or fewer negative aspects than most people have at their places of employment?" (1 = fewer negative aspects, 9 = more negative aspects).

The value of work alternatives was assessed by four concrete and three global items. The concrete items assessed perceived ease of finding similar jobs, availability of workers in the region, market value of workers' skills, and aversiveness of unemployment. The three global items were "All things considered, how good are your alternatives to this job?" (1 = terrible, 9 = excellent), "In general, how do your alternatives compare to your current job?" (1 = alternatives are much worse, 9 = alternatives are much better), and "How do your alternatives compare to your ideal way of occupying your time?" (1 = alternatives are much worse, 9 = alternatives are much better).

Twenty concrete items assessed investments: length of service, job tenure, vested and nonvested retirement programs, specific or nonportable training, friendship involvement, spousal employment, home ownership, and religious and community ties. Three global items assessed extent of job investments: "In general, how much have you invested in this job?" (1 = nothing, 9 = a great deal), "All things considered, to what extent are there activities/events/persons/objects associated with your job that you would lose if you were to leave?" (1 = none, 9 = a great many), and "How does your investment in this job compare to what most people have invested in their jobs?" (1 = I've invested less than most people, 9 = I've invested more than most people).

The criterion variables of job satisfaction and commitment were surveyed only with global items. Job satisfaction was measured by a combination of two direct and four indirect items: "All things considered, how satisfied are you with your current job?" (1 = not at all satisfied, 9 = extremely satisfied), "In general, how much do you like your job?" (1 = don't like it at all, 9 = like it very much), "Knowing what you now know, if you had to decide all over again whether to take the job you now have, what would you decide?" (1 = definitely would not take this job, 9 = would take this job without hesitation), "If a good friend of yours told you that he/she was interested in working in a job like yours for your employer, what would you tell him/her?" (1 = advise against it, 9 = strongly recommend it), "How does this job compare to your ideal job?" (1 = far from ideal, 9 = close to ideal), and "How does your job measure up to the sort of job you wanted when you took it?" (1 = not at all like the job I wanted, 9 = very much like the job I wanted). The resultant scale resembles the general job satisfaction scale employed by Quinn and Shepard (1974).

Five global items were utilized to measure the commitment criterion "How long would you like to stay at this job?" (1 = short period of time, 9 = long period of time), "How likely is it that you will quit this job in the near future?" (1 = extremely likely, 9 = not at all likely), "How committed are you to staying at your current job?" (1 = not at all committed, 9 = extremely committed), "How attached are you to your current job?" (1 = not at all attached, 9 = extremely attached), and "On the average, how many hours per month have you spent attempting to find a different job?" (_____ hours per month, on the average) This scale was used in an earlier study of commitment among blue-collar workers (Farrell & Rusbult, 1981) and was adapted from research on commitment to romantic involvements (Rusbult, 1980a)

Results

Reliability of Measures

At each of four times, responses to global items in each set were averaged. Alpha coefficients were significant and exceeded lowest acceptable levels (Nunnally, 1967) for sets of items designed to measure rewards (.81, .85, .92, .87), costs (.76, .80, .86, .58), alternatives (.77, .72, .60, .65), investments (.76, .80, .75, .76), satisfaction (.93, .95, .95, .95), and commitment (.88, .92, .92, .93)

These reliabilities rest on an assumption of discreteness between the various measures (i.e., divergent validity). Of course, the most problematic case is that of multicollinearity of predictors within time periods. The median intercorrelations among predictor variables for five measurements (employees who stayed at Times 1 through 4 and those who left) were as follows: rewards with costs ($r = -.56$; range = $-.38$ to $-.67$), rewards with

alternatives ($r = -.15$; range = $.04$ to $-.20$), rewards with investments ($r = .32$; range = $.09$ to $.37$), costs with alternatives ($r = .15$; range = $-.02$ to $.25$), costs with investments ($r = -.13$, range = $-.03$ to $-.19$), and alternatives with investments ($r = -.04$; range = $.02$ to $-.22$).

Predicting Job Satisfaction and Commitment Among Employees Who Stay

Job satisfaction Correlational analyses were performed in order to identify the best predictors of job satisfaction for employees who stayed. The results of these analyses are summarized in Table 1. Job satisfaction was significantly correlated with both reward value and cost value at each of four times. Multiple regression analyses revealed that reward and cost values significantly predicted level of satisfaction at each time (adjusted R^2 s = .62, .62, .74, .61). Comparing full with reduced models, it was found that the prediction based on these two factors was significantly superior to either of the zero-order correlations; for the closest comparison, at Time 3, using an increment in R^2 test (Cramer, 1972), $F(1, 57) = 4.31$, $p < .05$. The contribution of costs to this prediction was relatively weak (due in part to the moderate correlation between rewards and costs). It should also be noted that whereas the correlations between job satisfaction and reward value appear to remain relatively constant over time, the impact of cost value on job satisfaction appears to be relatively weak ini-

Table 1
Correlations Among Investment Model Variables

Variables	Employees who stayed				Employees who left
	Time 1	Time 2	Time 3	Time 4	
Job satisfaction with					
Rewards	.78**	.76**	.85**	.77**	.77**
Costs	-.42**	-.59**	-.68**	-.52**	-.44**
Job commitment with					
Rewards	.53**	.62**	.59**	.56**	.66**
Costs	-.14	-.33*	-.35*	-.36**	-.47**
Investments	.26*	.32*	.44**	.46**	.23*
Alternatives	-.27*	-.43**	-.33*	-.40**	-.33*
Approximate n	60	56	55	53	28

* $p < .05$ ** $p < .01$

tially (i.e., for those who stayed, costs became somewhat more important over time in affecting job satisfaction). The investment-size and alternative-quality variables were added to this two-factor model, and further multiple regression analyses were performed. The multiple correlations for these four-factor models were not significantly superior to those for the two-factor models (rewards and costs) at any of four times; for the best four-factor model, at Time 3, $F(2, 56) = 2.28, p > .05$ ns. Thus, at each of four times, the most accurate and parsimonious prediction of job satisfaction for employees who stayed follows from a simple two-factor model consisting of the reward and cost values of the job. These findings are in agreement with investment model predictions.

Job commitment Zero-order correlations between each investment model variable and the job commitment measure for employees who stayed are also displayed in Table 1. At each time, the multiple regression of job commitment with rewards, costs, alternatives, and investments was computed. Comparing full to reduced models (Cramer, 1972), at Time 1, either the cost value, $F(1, 57) = 1.00, p > .05$ ns, or investment size, $F(1, 57) = .89, p > .05$ ns, factors could be eliminated from the full four-factor model (adjusted $R^2 = .30$) without significantly decreasing the percentage of variance in job commitment accounted for; neither cost value nor investment size contributed substantially to the prediction of commitment at Time 1. The same was true at Time 2: Removing either the cost value, $F(1, 58) = 3.57, p > .05$ ns, or investment size, $F(1, 58) = 1.16, p > .05$ ns, factors from the full model did not significantly decrease the prediction of job commitment (for the four-factor model, adjusted $R^2 = .44$). However, at Time 3, investment size was essential to the prediction of commitment, $F(1, 58) = 6.64, p < .05$, and alternative value was not, $F(1, 55) = 3.00, p > .05$ ns (adjusted $R^2 = .38$). Finally, at Time 4, all four factors contributed significantly to the prediction of job commitment (adjusted $R^2 = .45$); comparing full to reduced models by eliminating the weakest factor, job costs, $F(1, 56) = 4.56, p < .05$. These results suggest that investment size and job cost value initially do not substantially influence the job

commitment of those who stay, but they exert an increasingly powerful impact over time. Job reward value and alternative quality seem to exert significant influence on commitment from the beginning of a job onward (except for the unexpected nonsignificant influence of alternatives on commitment at Time 3). These results are generally consistent with investment model predictions.

Predicting Job Satisfaction and Commitment Among Employees Who Leave

Job satisfaction Responses on the questionnaires employees completed just prior to quitting were pooled in order to examine the determinants of satisfaction and commitment immediately before turnover. Job satisfaction was significantly correlated with reward value and cost value (refer to Table 1), and the multiple correlation of these two factors with job satisfaction (adjusted $R^2 = .76$) was significantly superior to either zero-order correlation, comparing the full model to reward value alone, $F(1, 26) = 24.76, p < .01$. Adding alternative quality and investment size to this two-factor model did not significantly improve the prediction of job satisfaction, $F(2, 25) = 2.89, p > .05$ ns. These findings are consistent with the results for employees who stayed.

Job commitment For those who left, job commitment was significantly correlated with reward value, cost value, alternative quality, and investment size (see Table 1). The multiple regression of these four factors onto job commitment was also significant (adjusted $R^2 = .44$), but eliminating the investment-size factor from the full four-factor model did not significantly reduce the predictive power of the model, $F(1, 26) = 1.24, p > .05$ ns.

Changes Over Time in Investment Model Variables

Analysis of variance was used to determine whether investment model factors effectively distinguish employees who stay from those who leave. First, the mean value of each model variable for employees just before they left was contrasted with comparable measures for those who stayed at Time 4 and with

their averaged level of each factor for Times 1 through 4. None of these differences were statistically significant: Those who left did not exhibit, on average, lower levels of rewards or investments or higher levels of costs or alternative value than did those who stayed. Average change scores for each factor were then computed (for those who stayed, average algebraic change over the three time lags, for those who left, algebraic change over the lags prior to leaving). These data were subjected to a one-factor analysis of variance (stayed vs. left), the results of which are summarized in Table 2. Compared with those who stayed, employees who left evidenced significantly greater change over time in regard to each investment model variable: Job reward value decreased, job cost value increased, alternative quality improved, and investment size declined. These findings provide good support for investment model assertions concerning the process by which commitment grows or declines over time.

Predicting Staying or Leaving— The Role of Commitment

Three types of analysis were performed to evaluate the role of job commitment in predicting staying or leaving. First, mean job commitment was compared between groups. Mean commitment measured just prior to turnover for those who left ($M = 4.10$) was found to be significantly lower than that for those who stayed, measured at Time 4 ($M = 5.79$), $F(1, 70) = 7.59$, $p < .008$, and averaged over Times 1 through 4 ($M = 6.03$), $F(1, 64) = 11.98$, $p < .001$. Second, the hypothesis

that mean level of commitment decreases over time for those who leave while remaining relatively constant (or increasing) for those who stay was assessed. Average decline in commitment scores was computed, and those who left evidenced significantly greater decline in commitment over time ($M = -1.90$) than did those who stayed ($M = -0.10$), $F(1, 62) = 28.15$, $p < .001$. A graphic representation of changes in commitment over time is presented in Figure 1. It is interesting to note that levels of commitment did not differ significantly at Time 1—for those who left, $M = 5.88$, for those who stayed, $M = 6.12$, $F(1, 82) = .25$, $p < .62$ *ns*—those who left became less committed to their jobs over time.

A third type of analysis concerned the role of commitment in directly influencing stay or leave decisions. The algebraic change scores for each investment model variable as well as a dichotomous stay or leave measure were utilized in a series of correlational analyses. Decline in commitment and the stay or leave measure were strongly correlated ($r = -.61$). The multiple correlation between stay or leave and decline in job rewards, costs, alternatives, and investments was also significant (adjusted $R^2 = .65$). But when the decline in commitment measure was added to this four-factor equation and the full and reduced models were compared, the prediction of staying or leaving improved substantially (adjusted $R^2 = .70$), $F(1, 39) = 6.26$, $p < .05$. Also, adding the decline in commitment measure to the four-factor equation resulted in substantial reductions in the standardized regression coefficients for rewards (.242 re-

Table 2
Mean Change in Each Investment Model Variable

Variable	Employees who stayed	Employees who left	ANOVA results		
			<i>df</i>	<i>F</i>	<i>p</i> <
Reward value	.14	-3.56	1, 58	40.68	.001
Cost value	-.17	1.15	1, 56	8.95	.004
Alternative quality	.04	2.35	1, 54	32.53	.001
Investment size	.80	-1.92	1, 53	11.26	.002
Approximate <i>n</i>	45	15			

Note. ANOVA = analysis of variance. Since this analysis utilized data from all time periods for a given subject, included cases are those with absolutely no missing data.

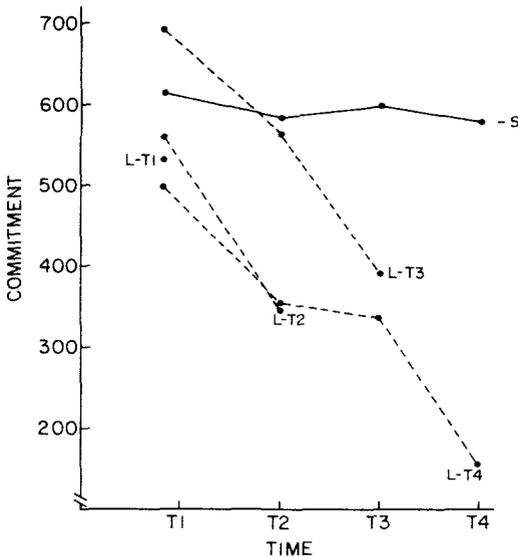


Figure 1 Mean job commitment as a function of time for employees who stayed (S) and those who left (L)

duction), costs (.225 reduction), alternatives (183 reduction), and investments (.291 reduction) Thus, employees who left not only evidenced greater decreases in job rewards and investment size and greater increases in job costs and alternative quality than did those who stayed, but the reductions in commitment that accompany such changes appear to play a very important role in directly influencing stay or leave decisions

Impact of Occupation and Subject Sex

All of the analyses reported above were first performed including both occupation (accountant or nurse) and subject sex (male or female) as independent variables. For the multiple regression analyses, when occupation and sex were added to the equations reported previously, none of the resultant multiple correlations were significantly superior to those reported above. Out of nearly 40 analyses of variance including these two factors, only two revealed significant main effects for occupation, one revealed a significant effect for subject sex, and one revealed a significant Occupation \times Sex interaction. Thus, it should be clear that differences in sex and occupation do not significantly affect the findings reported above.

Discussion

The results of this study provide good support for investment model predictions. In general, greater job rewards and lower job costs induce greater employee satisfaction, and greater job commitment is encouraged by higher rewards, lower costs, greater investment of resources, and poorer quality alternatives Consistent with predictions, for employees who stay, model variables do not exert equal impact at all stages of employment. Job rewards and alternative quality appear to affect the work experience from the beginning of employment onward The impact of job costs on satisfaction and commitment is initially weak, as is the effect of investment size on commitment. These results are consistent with intuition and with indirect evidence from previous research. During early stages at a job, job costs are minimal and investment size small, but as time passes, these factors become more important determinants of worker perceptions.

The pattern of results for employees who left differed only slightly from those for employees who stayed. Job satisfaction was related to both job rewards and job costs, and level of commitment was predicted from job rewards, job costs, and alternative quality. Investment size was unnecessary in the prediction of job commitment for those who left. Since the zero-order correlation between investment size and commitment was significant, and since decline in investment size did distinguish those who stayed from those who left, it may be that this nonsignificant contribution of investment size to the prediction of commitment resulted from multicollinearity Alternatively, it may be that employees who leave report low commitment regardless of the degree to which they have invested in their jobs, or it may be that since this group includes some persons who quit their jobs at early stages of employment, these persons had not yet had time to invest much in their jobs These speculations remain to be explored in future research

The study also revealed important findings regarding process variables that distinguish between employees who stay and those who leave. At any particular stage of employment (e.g., the first few days at a job), contrasts of

mean levels of investment model variables may not necessarily reveal substantial differences between the two groups. It is the *process of change*—declining rewards, increasing costs, divestiture (i.e., declining investment size), and improving alternative quality—that distinguishes between those who stay and those who leave. Furthermore, it appears that the most important process of change in influencing turnover decisions is the process of declining commitment, although changes in rewards, costs, alternatives, and investments are all significantly related to stay or leave decisions, and although changes in each of these factors affects changes in job commitment, decline in job commitment appears to most directly and powerfully affect such decisions.

These findings are consistent with those of Porter et al. (1976) and Youngblood et al (Note 1), who found that reductions in commitment (although defined and operationalized differently) preceded job turnover. However, the present results differ somewhat from those of Mobley, Horner, and Hollingsworth (1978), who found that once changes in commitment were taken into account, other factors no longer evidenced direct effects on turnover. In the present investigation, even after the impact of changes in job commitment was accounted for, other investment model variables continued to exert effects on turnover, though these effects were relatively weak. It should be noted, however, that comparisons of our findings with those of other authors are difficult, due to methodological differences in the measurement of similar constructs.

What do these findings suggest for employers who seek to maintain high job satisfaction and commitment while discouraging turnover? Van der Merwe and Miller (1973) caution against oversimplified schemes for the control of turnover: "Labour turnover is not a straightforward process" (p. 430). With this caution in mind, one may argue that programs to reduce attrition may benefit by increasing pay relative to competing firms, by providing workers with realistic job previews, by job redesign and other programs intended to eliminate aversive elements of work, by promoting employee-firm linkages through home loan assistance, employing

spouses, and so forth, and by offering unique advantages (e.g., job sharing) not available elsewhere. Such recommendations, obvious implications of the investment model, are attractive and easy to communicate to practitioners.

The present study contributes to the body of literature on organizational behavior by demonstrating the process by which job commitment increases or decreases over time, by identifying the importance of job rewards, job costs, investments, and alternatives in influencing job satisfaction, job commitment, and turnover, and by pointing to the importance of changes in conditions and/or perceptions, particularly changes in level of job commitment, in influencing stay or leave decisions. The research provides very good support for a wide range of investment model predictions. Since the investment model has previously been shown to apply to other types of exchange relationships (Rusbult, 1980a, 1980b), and since it is firmly rooted in the general exchange tradition of psychology and sociology, the investment model should prove applicable to a broad range of important organizational phenomena.

Reference Note

- 1 Youngblood, S. A., Mobley, W. H., Meglino, B. M., Laughlin, J. E., & Baker, R. L. *Organizational socialization: A longitudinal analysis of attitude change, turnover, and reinvestment in the military* (ONR-TR-13). Columbia, SC: Center for Management and Organizational Research, 1981.

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