



Job Performance and Turnover Decisions: Two Field Studies

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Hypotheses involving relationships between job performance and turnover decisions were tested in two settings within the context of an integrated model. In an initial test with a sample of manufacturing operatives, support was found for (a) a curvilinear relationship between performance and turnover intentions, and (b) a satisfaction X performance interaction in predicting such intentions. A second test of the same hypotheses, using actual turnover as a criterion, was conducted for first-line manufacturing supervisors. Only the curvilinear hypothesis received support.

Though job performance is a focal variable in several integrative models of organizational behavior, its relationship with turnover has yet to be fully considered (Wells & Muchinsky, 1985). This is surprising since turnover is recognized as having functional as well as dysfunctional consequences (Dalton, Todor, & Krackhardt, 1982; Hollenbeck & Williams, 1986). Of importance in determining the gravity of turnover is the performance of employees remaining in an organization as opposed to that of those leaving. An organization losing top performers would be more negatively affected, whereas one losing poor performers could potentially experience positive effects, assuming better performing individuals were available as replacements.

Research concerning job performance and turnover relationships has yielded mixed results. Several studies have reported a positive association between job performance and turnover. These studies have been conducted largely in professional contexts. For example, Allison (1974) found that in a sample of over 2000 university scientists, higher productivity was associated with a higher probability of individual turnover. A similar conclusion was reached by Lazarfield and Thie-

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lens (1958) for another academic sample, by Bassett (1967) with aerospace engineers, and by Seybolt, Pavett, and Walker (1978) with a nursing sample.

In contrast, negative performance-turnover relationships have been found in other settings. Dreher (1982) demonstrated that managers who remained scored significantly higher across multiple measures of performance than those who left. In a study examining predictors of voluntary and involuntary turnover among bank tellers, Stumpf and Dawley (1981) found negative correlations between performance and both forms of turnover. More recently, Keller (1984) reported evidence that lower performers were more likely to turn over. And finally, as might be expected from the contradictory findings in the area, some studies have found neither positive nor negative significant relationships between performance and turnover (e.g., Martin, Price, & Mueller, 1981).

Perhaps in response to inconsistent results in the literature, recent work considering performance-turnover relationships has increased in conceptual and methodological sophistication. For example, Wells and Muchinsky (1985) examined the ability of biographical and performance variables to discriminate among three classes of turnover—firings, quits, and promotions. Their results indicated that the performance of promoted employees was significantly greater than that of those quitting, who, in turn, exhibited greater performance than those fired. Wells and Muchinsky noted that despite the differences in performance among the three turnover classifications, they could not predict at better than chance levels who would or would not quit. This lack of predictability was explained as suggesting that additional psychological variables could be important in determining decisions to quit.

Extending propositions offered by March and Simon (1958), Jackofsky (1984) developed a model of turnover-performance relationships that includes specific psychological variables. The model includes three primary partial determinants of voluntary turnover: (a) desirability of movement, discussed largely in terms of job satisfaction; (b) ease of movement, discussed in terms of intraorganizational and extraorganizational work options; and (c) intention to quit, based on the notion that voluntary behavior may be categorized as intentional behavior. Ease and desirability of movement are formulated to not only interact with each other, but also directly impact turnover intentions, and indirectly affect turnover (through intention to quit).

Job performance is assumed to affect both the ease and the desirability of movement. Regarding the general relationship between job performance and desirability of movement, Steers and Mowday (1981) note that poor performance has been shown to lead to poor attitudes about the job and increased anxiety and frustration. Concerning job satisfaction specifically, positive relationships with performance may be posited under certain circumstances. Jackofsky (1984) lists several such conditions involving both individual and systems variables. For example, when strong performance-reward instrumentalities exist, good performers will likely be rewarded by pay, promotions, or other means. Such rewards should increase their satisfaction and reduce their inclination to leave the organization. Thus, performance may impact the desirability of movement when favorable organizational conditions exist (e.g., a contingent reward system). Concerning

ease of movement, performance is anticipated to have a direct influence because it can alter employee perceptions about the availability of job alternatives. Jackofsky and Peters (1983) suggest that to the extent ability and performance are positively related, high performers should perceive alternatives to be available and low performers should perceive the opposite.

The Jackofsky model also acknowledges that job performance may influence involuntary turnover. Low performance as a cause of dismissal is well recognized. Moreover, turnover recorded as voluntary may actually be more involuntary if an organization emits cues alerting low performers to be the possibility of dismissal. Such employees may leave "voluntarily" because they have no other viable option (cf. Wells & Muchinsky, 1985).

Predictions and Criteria

Hypotheses

Jackofsky's (1984) model provided the impetus for the present study, the purpose of which was to test two predictions flowing directly from the model. The first prediction is that the relationship between the probability of turnover and performance should take the form of a U-shaped curve. This curvilinear relationship is predicated on the view that the probability of turnover is determined by both voluntary and involuntary turnover processes. When individual job performance is low, the probability of turnover should be high because low performers would be more apt to be dismissed (Wells & Muchinsky, 1985). As performance becomes sufficient for organizational retention, but inadequate to increase ease of movement, individuals are more likely to stay. Finally, after performance reaches a critical threshold, job performance should be positively related to turnover because individuals are likely to perceive movement as easier and initiate subsequent search activities. Only one study could be found that tested this curvilinear hypothesis. Using one sample of accountants and another of truck drivers, Jackofsky, Ferris, and Breckenridge (1986) found significant curvilinear effects for both samples, in the form of the expected U-shaped curve.

The second prediction examined suggests differing job satisfaction-turnover relationships, depending on an individual's level of performance. This hypothesis hinges on two premises. First, desirability of movement, reflected largely by job dissatisfaction, should be positively related to turnover probability. There is sufficient empirical support in the literature for this premise (Carsten & Spector, 1987). Second, ease of movement should be greater for higher performing individuals. Higher (vs. lower) performers, assuming a positive relationship between perceived ability and performance (cf. Jackofsky & Peters, 1983), should perceive they are better able to find alternative work. Together, these two premises suggest that higher performers would be more disposed to exhibit turnover in reaction to job dissatisfaction. Thus, when compared to that found for lower performers, the job satisfaction-turnover relationship should be more negative for persons performing at higher levels. No tests of this second prediction could be found in the literature.

Behavioral Intentions and Recorded Turnover

As discussed above, the hypothesized curvilinear relationship stems from voluntary and involuntary turnover components and their antecedents. A problem may arise in detecting this curve with recorded turnover as the criterion because of the disparate frequency with which voluntary and involuntary components occur: The majority of turnover appears to be voluntary (Price, 1977). This suggests the involuntary component will contribute less to the variation in recorded turnover. The greater this component is attenuated, the less likely it is that the negatively sloping part of the U-shaped relationship will be evidenced.

Recognizing this potential difficulty, two representations of the turnover decision were used to test study hypotheses. For tests in one organization, actual turnover served as the criterion. For tests in a second organization, a measure of intention to quit was the criterion. Recorded turnover serves as a sample (Wernimont & Campbell, 1968) of the ultimate criterion of meaningful personnel loss whereas intention to quit served as a sign (rather than sample) of the ultimate criterion.

Behavioral intentions have been used as criteria in turnover studies (e.g., Price & Mueller, 1981; Thompson & Terpening, 1983) and have been linked with actual turnover in individual (Keller, 1984) and meta-analytic studies (Steel & Ovalle, 1984, $r = .50$). In addition to predicting voluntary turnover, intention to quit could also anticipate involuntary turnover. If (a) individuals are sensitive to feedback concerning performance and (b) work behavior affects subsequent feelings, candidates for involuntary turnover (poorer performers) would be aware that their long-term chances of job survival are less than optimal. These circumstances should evoke intentions to quit on the part of poor performers if for no other reason than to rectify incongruencies between efficacy feelings stemming from healthy work behavior and those that are possible given their present job. This coincides with Kraut's (1975) notion of a mutual agreement turnover pact whereby persons tend to withdraw from a job to avoid deflating feedback. The viability of this rationale depends on the existence of a performance feedback system. Such a system was in place in both organizations participating in the study.

Methods

Samples and Research Settings

Data were gathered from two samples, each from separate organizations. For purposes of comparison, both samples were drawn from manufacturing contexts.

Operative sample. Respondents consisted of 220 operative employees in a medium-size electronics manufacturing plant. Of the respondents, 176 were female and 44 were male. The mean age of the sample was 37 years and mean tenure was 55 months. The educational profile of the sample was as follows: no high school degree, 18%; high school degree, 50%; some college, 27%; and college degree, 4%.

Supervisory sample. Respondents were 365 first-line supervisors working for a textile manufacturing firm. Data were collected from multiple plant sites nationwide as part of a larger study. Individuals sampled held positions at a rank one echelon above the operative level within the firm's production component. The

mean age of the sample was 41.8 years and average tenure was 223 months. The sample was 97% male. The educational experience of the sample was as follows: no high school degree, 34%; high school degree, 36%; some college, 16%; junior college/college degree, 12%.

Measures

Operative sample. Intention to quit was measured by Lyon's (1971) often used 3-item scale ($\alpha = .82$). Two measures of overall job satisfaction were employed. The Minnesota Satisfaction Questionnaire (MSQ), Short Form (Weiss, Dawis, England, & Lofquist, 1967) served as the first measure ($\alpha = .89$). Job satisfaction was also assessed by a single 5-point global indicator concerning how people generally felt about their jobs. Global indicators of satisfaction may provide a more comprehensive assessment of satisfaction than summation indicators (Scarpello & Campbell, 1983). Intention to quit and MSQ data were collected on 6- and 5-point response scales, respectively. The scales were summed so that higher scores indicated higher intention to quit and higher satisfaction. Gathered from company records, overall job performance was measured by a single 4-point supervisory rating scale, with a higher score indicating higher performance. Test-retest reliability data for this item, available for 145 employees, was .44 ($p < .001$) across a 2-year period. Also, for the entire sample, the performance measure correlated with recorded absenteeism ($r = -.28, p < .001$) and tardiness ($r = -.32, p < .001$). In a structured and paced operative job such as this one, an employee's actual presence on the job should correlate with performance (i.e., both absenteeism and tardiness should correlate negatively with rated performance). These data suggest that despite the global nature of the measure, it exhibited acceptable reliability and was correlated in the expected direction with objective data (cf. Sheridan, 1985).

Supervisory sample. Turnover was assessed for an 18-month interval. That is, data were initially collected at the study's outset and personnel records were subsequently searched 18 months later to identify individuals no longer with the organization. Of 365 respondents in the sample, 45 were no longer employed (12% rate). Turnover was recorded by the organization as voluntary. Job satisfaction was measured by the MSQ Short Form ($\alpha = .88$). Job performance data were collected specifically for the study, using the same performance appraisal form normally used by the company. Performance was assessed using supervisory ratings on an 11-item scale ($\alpha = .93$). Items tapped behaviors such as communication, judgment, problem-solving, innovation, use of technical skill, information dissemination, and action in crises. A 5-point scale was used for the MSQ and a 6-point scale for job performance. Scale items were summed such that higher scores represented higher satisfaction and performance.

Two points regarding measures used in the study should be noted. First, for all multiple item scales, the summed responses were divided by the number of scale items to maintain the original item metric. Secondly, though Jackofsky's model focused on job turnover as the criterion, this study focuses on intent to leave or actual departure from the organization. However, the major constructs used by

Jackofsky (1984) to explain job turnover have been used to explain organizational turnover (e.g., March & Simon, 1958). Moreover, Jackofsky et al. (1986) have used organizational turnover as the criterion in testing the curvilinear hypothesis.

Analyses

Operative sample. Multiple regression procedures were used to test both hypotheses. The first hypothesis, positing a U-shaped curvilinear relationship between performance and turnover, was tested using hierarchical polynomial regression (Cohen, 1978). This technique requires that linear terms be entered into a regression equation first followed by a curve component. If the curve component, here a quadratic or "squared" term, accounted for a significant amount of variance in the dependent variable beyond that explained by the linear terms, the hypothesis would be supported. Intention to quit served as the dependent variable and linear and quadratic job performance components served as predictors in this analysis. The second hypothesis, a satisfaction by performance interaction in predicting intention to quit, was tested using standard moderated regression techniques. Full and restricted regression models assessed the amount of variance owing to interaction effects beyond that explained by main effects alone (Arnold, 1982). Plots were employed to interpret any significant interactions.

Supervisory sample. With turnover measured as a qualitative dichotomous variable, it was improper to use ordinary least squares regression procedures to test hypothesized effects. In such a case, logistic regression is recommended (Cheung & Smith, 1981). This technique has been used increasingly in turnover research (e.g., Wolpin & Burke, 1985). The LOGIST procedure of the Statistical Analysis System (SAS) was used for computational purposes (Harrell, 1983). Steps in building logistic regression models to test the hypotheses were the same as those used for the operative sample. The quadratic term (for the curvilinear test) and the cross-product term (for the moderator test) were added in the regression equation after appropriate variables had already been entered. Significant increments in explained variance would then indicate support for hypothesized effects.

Several researchers (e.g., Arnold & Feldman, 1982; Stumpf & Dawley, 1981; Thompson & Terpening, 1983) have suggested that tenure may have an impact on both intended as well as actual turnover. The samples examined in the present study differed in average tenure. To increase the demographic comparability of the samples, tenure (in months) was entered as the first variable in both the least squares and the logistic regression models.

Results

Descriptive statistics for variables relevant to each sample are listed in Table 1. Expectedly, job satisfaction was negatively correlated with turnover criteria for the two samples. Performance was not significantly correlated with either of the turnover criteria used in the study.

Operative sample. Results are reported first for the operative sample. Information reported regarding R^2 has been rounded to two digits. As previously noted, the first hypothesis was tested in two steps. Tenure and the linear job per-

Table 1
Descriptive Statistics and Intercorrelations Among Variables
for Operative and Supervisory Samples

Variables	<i>M</i>	<i>SD</i>	<i>r</i>			
			2	3	4	5
Operative Sample						
1. Intention to quit	2.07	.89	-.63**	-.67**	.04	.06
2. MSQ satisfaction	3.11	.58		.71**	.05	.04
3. Global satisfaction	3.80	.96			.04	.02
4. Job performance-linear term	2.72	.66				.99**
5. Job performance-quadratic term	7.83	3.70				—
Supervisory Sample						
1. Turnover	—	—	-.12*	-.09	-.07	
2. MSQ satisfaction	3.93	.43		.05	.06	
3. Job performance-linear term	4.48	.78				.99**
4. Job performance-quadratic term	20.71	7.12				—

Note. *M* and *SD* are not applicable for turnover, coded 0 = stay ($n = 320$), 1 = leave ($n = 45$). Correlations for turnover are point-biserial.

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

formance term were entered into the regression equation initially and accounted for no variation in intention to quit ($R^2 = .00$). The quadratic job performance term was then added and increased R^2 to .02, a small but nevertheless significant change ($p < .05$). The regression coefficient for the quadratic term was positive in sign, indicating the presence of a U-shaped curve in the data. Information regarding regression coefficients for this and all other tests of study hypotheses are displayed in Table 2.

Regarding the second hypothesis, the change in R^2 between restricted and full models was calculated. For the MSQ measure, the R^2 for the restricted model (tenure, satisfaction, performance terms only) was .40; R^2 for the full model (tenure, satisfaction, performance, and satisfaction X performance terms) was .41. The R^2 change was significant at $p < .05$. Using the global satisfaction measure, R^2 was .47 for the restricted model and .49 for the full model. Again, the change in R^2 was significant ($p < .008$). Plots for both MSQ satisfaction and global satisfaction were constructed to determine the nature of the interactions. As predicted, both plots indicated that the satisfaction-turnover intention relationship was more negative for higher as opposed to lower performers. (These plots are available from the first author upon request.)

Supervisory sample. Although logistic regression was employed for the supervisory sample, hypotheses could be tested using the same stepwise logic as above. With logistic regression, "independent" variables are used to estimate the log odds of a binary event, in this case, turnover. Concerning the curvilinear hypothesis, tenure and the linear job performance term were entered in the regression equation, followed by the quadratic job performance term. The quadratic term contributed significantly to the variance explained in turnover by the tenure

Table 2
Regression Statistics for Hypothesis Tests

Operatives Sample ($n = 220$)			
Model Variables	Hypothesis 1: Curvilinear relationship		
	<i>b</i>	STD ERR <i>b</i>	<i>p</i>
Tenure	.004	.01	.76
Performance	-3.44	1.80	.06
Performance ²	.65	.32	.05
	Hypothesis 2: Satisfaction X performance interaction		
	<i>b</i>	STD ERR <i>b</i>	<i>p</i>
Tenure	-.009 (-.006)	.009 (.01)	.33 (.57)
Satisfaction*	-.51 (-.05)	.53 (.05)	.34 (.26)
Performance	2.07 (2.66)	.71 (1.23)	.004 (.03)
Satisfaction X Performance	.50 (-.03)	.19 (.02)	.008 (.05)
Supervisory Sample ($n = 365$)			
Model Variables	Hypothesis 1: Curvilinear relationship		
	<i>b</i>	STD ERR <i>b</i>	<i>p</i>
Tenure	-.001	.001	.23
Performance	-3.67	1.28	.004
Performance ²	.38	.14	.008
	Hypothesis 2: Satisfaction X performance interaction		
	<i>b</i>	STD ERR <i>b</i>	<i>p</i>
Tenure	-.0007	.007	.49
Satisfaction	-3.53	2.56	.17
Performance	-2.81	2.28	.22
Satisfaction X Performance	.63	.58	.28

Note: The *b* listed for each variable is that obtained after controlling for all other variables in the model. For the operative sample, *p* is based on the *F* distribution; for the supervisory sample, *p* is based on the chi-square distribution.

*Results for both the global and the MSQ satisfaction measures are listed. Statistics pertaining to the MSQ are enclosed by parentheses.

and linear performance terms ($N = 365$, $X^2 = 6.98$, $df = 1$, $p < .008$). As Table 2 shows, the sign of the regression weight for the quadratic term was positive, again supporting the U-shaped curve hypothesis.

The second hypothesis was also examined within a logistic regression model, using the same logic as normally employed in moderated regression. When the cross-product term (satisfaction X performance) was added to the model containing tenure, satisfaction, and performance variables, the increment in explanatory power was not significant ($p = .28$). Thus, only the first hypothesis was supported when actual turnover was the criterion variable.

Discussion

In keeping with research taking a more involved perspective of performance-turnover relationships, the present study examined data from two samples for evidence of a curvilinear relationship between turnover criteria and performance, and a satisfaction X performance interaction in predicting turnover criteria. Though the statistical effects found were small in magnitude, the use of two different representations of turnover decisions (intentions and behavior) provides a measure of robustness to the hypotheses tests. The existence of a U-shaped cur-

vilinear relationship was supported in the operative sample, using behavioral intentions as the criterion, and in the first-line supervisory sample, using actual turnover as the criterion variable. The latter result coincides with that of Jackofsky et al. (1986), who reported similar performance-turnover relationships. Unique to the present study was the curvilinear relationship found between intention to quit and performance.

The prediction that under conditions of low satisfaction turnover decisions would be greater for higher performers was supported in the operative sample. As noted by Jackofsky (1984), whether performance will moderate the relationship between satisfaction and turnover decisions could depend on factors such as the degree to which rewards are performance contingent (cf. Dreher, 1982). Post hoc evidence suggests there may have been differences between the samples regarding performance-reward relationships. Research indicates that high performers are more satisfied than low performers when rewards are administered contingently (Podsakoff, Todor, & Skov, 1982). To determine if satisfaction differences existed, both samples were split at median performance levels and tested for significant satisfaction differences between high and low performers. For the operative sample, no significant difference was found; for the first-line supervisors, there was a significant difference ($t = 2.03, p = .04$).

From the perspective of Podsakoff et al. (1982), these findings intimate that performance-reward linkages may have been stronger in the supervisory sample. If rewards were more performance-linked for the supervisors, they may have been less prone to leave the organization regardless of their satisfaction level because future rewards could be anticipated. Given this scenario, it is reasonable that the hypothesized interaction was not found. In contrast, the operative employees may have been working under conditions of minimal performance-reward linkages; dissatisfied high performers might have been more prone to leave because of a lack of anticipated future rewards. If this were the case, performance might moderate satisfaction-intention to quit relationships as found in the present study. Qualitative appraisals of the organizational reward systems of the two samples also suggested performance-reward contingencies in the samples may have differed. Persons knowledgeable of the electronics plant noted that the jobs in which the operatives worked involved a very structured pay scale, with few incentives or promotion possibilities. High performers would have to look elsewhere for opportunities and would be more likely to do so if highly dissatisfied. There was no highly formalized incentive system for the first-line supervisors, but the perception was that the organization promoted from within and that in the long run, people who produced had better futures with the organization.

Although differences in performance-reward linkages provide an explanation for finding a significant interaction in the operative sample only, there is a more parsimonious one: intention to quit and actual turnover are different though overlapping operationalizations (Steel & Ovalle, 1984). As opposed to actual turnover, turnover intentions may be more sensitive to variations in job satisfaction because both are attitudinal rather than behaviorally-based. However, because curvilinear effects were detected using both measures, it would seem the different measures are capturing some of the same dynamics in both samples. Certainly,

the use of intentional versus behavioral turnover criteria within the context of Jackofsky's model represents an area for additional inquiry.

The current research suggests that performance should be considered if turnover is to be more completely understood. Our findings, along with those of others, seem to justify going beyond simple linear views of performance-turnover relationships. Importantly, more complex views of performance-turnover relationships, such as the curvilinear one found here, may be subject to situational influences. Reward practices, as discussed in connection with tests of the interaction hypothesis, and market conditions (Carsten & Spector, 1987; Hulin, Roznowski, & Hachiya, 1985) may act to selectively constrain or amplify such relationships. Delineating conditions that influence connections between performance and actual turnover or turnover intentions would be a worthwhile research endeavor.

From a practical viewpoint, the current findings reiterate that organizations consider the type of persons terminating their employment (Hollenbeck & Williams, 1986). If both low and high performers are more likely to leave, managers may want to rethink programs designed to reduce all turnover, because this would be tantamount to spending some resources on employees with lower probabilities of returning the investment through their performance contributions. Also, study results suggest that examining turnover intentions in conjunction with performance could yield information about employees with higher probabilities of quitting. Turnover intentions may provide a proactive means of scrutinizing performance-turnover potential where actual turnover as a percentage of the workforce is low. Whereas external economic conditions could temporarily attenuate turnover, internal conditions that encourage turnover (e.g., punitive supervisory climate) might remain constant. In such circumstances, turnover intentions measures might alert management to the potential for attrition even though unfavorable external conditions have reduced current turnover to negligible levels. A final implication is that managing turnover through attitude surveys identifying subgroups of satisfied/dissatisfied employees may be futile. Without considering performance levels in conjunction with satisfaction information, one could misconstrue the nature of future turnover decisions.

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