

**VOLUNTARY TURNOVER AND ALTERNATIVE  
JOB OPPORTUNITIES**

**Barry Gerhart**

**Working Paper #89-03  
(Revised December 1989)**

Center for Advanced Human Resource Studies  
New York State School of Industrial and Labor Relations  
Cornell University  
Ithaca, New York 14851-0952

(607) 255-3279

Journal of Applied Psychology, Forthcoming

This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make the results of Center research, conferences, and projects available to others interested in human resource management in preliminary form to encourage discussion and suggestions.

## Abstract

Models of turnover specify important roles for both general labor market conditions and perceptions. There is consistent support for the role of general labor market conditions, but evidence on labor market perceptions is mixed. However, no empirical study has included both types of variables. Using a national sample of young adults, both types of measures were found to influence voluntary turnover, either directly or through other factors. However, the two constructs are not necessarily closely linked. For example, despite an intention to quit (based partly on perceived ease of movement), an employee may stay with the organization because general labor market conditions result in a generally low level of alternative job openings.

## Turnover and Alternative Job Opportunities

A recurrent theme in the turnover literature is that the availability of alternative jobs influences turnover intentions and behavior. For example, March and Simon stated that: "Under nearly all conditions the most accurate single predictor of labor turnover is the state of the economy....When jobs are plentiful, voluntary movement is high; when jobs are scarce, voluntary turnover is small" (1958, p. 100). This view is consistent with the economic literature: "...when labor markets are tight (jobs are more plentiful relative to job seekers) one would expect the quit rate to be higher than when labor markets are loose (few jobs are available and many are laid off)...One measure of tightness is the unemployment rate" (Ehrenberg & Smith, 1982, p. 285).

March and Simon (1958), however, further argued that general labor market conditions influenced voluntary turnover through perceived ease of movement, which interacted with perceived desirability of movement to influence turnover. Their model suggests that certain factors (e.g. dissatisfaction) may "push" the employee to look for alternative employment, while other factors (e.g. the perception of attractive alternative job opportunities) may "pull" the employee to consider alternative employment.

A subsequent model by Mobley, Griffeth, Hand, and Meglino (1979) similarly hypothesizes that "economic-labor market" factors (e.g. unemployment, vacancy rates) influence turnover indirectly through "labor market perceptions." Perhaps because different types of employees are thought to face different types of labor markets,

occupational and personal characteristics (e.g. aptitude, tenure) are also included as determinants of labor market perceptions. Finally, these latter perceptions are specified to interact with desirability of movement perceptions to influence intention to leave which, in turn, has a main effect on turnover.

Other models, however, question whether the translation of intention into voluntary turnover behavior is so direct. For example, Steers and Mowday (1981) and Michaels and Spector (1982) have argued that an intention to quit is more likely to result in voluntary turnover when labor market conditions are such that alternative jobs are more generally available. As Michaels and Spector suggest: "If a person intends to quit a job, he or she most likely would quit when another job became available" (p. 58). Similarly, Muchinsky and Morrow (1980, p. 276) argue that "when the Economic Opportunity valve is 'open' (alternative means of employment are readily available)", the relation between individual factors and turnover will be stronger than when the valve is closed. Thus, in contrast to Mobley et al. (1979a), these models hypothesize an interaction between general labor market conditions and intention in influencing turnover.

Another potential deviation from the Mobley et al. (1979a) model is the possibility that general labor market conditions influence voluntary turnover directly, in addition to their effects through labor market perceptions and intentions. The argument is that most workers "do not quit on the basis of probabilities estimated from alternatives available; they quit on the basis of certainties represented by jobs already offered" (Hulin, Roznowski, & Hachiya, 1985, p. 244). The

probability of an alternative offer is linked to general labor market conditions (Hulin et al.). An implication is that although a person may perceive ease of movement to be low, an attractive alternative job offer may nevertheless later arise that results in turnover, consistent with Granovetter's (1974) finding that job offers are often unexpected and unsolicited. On the other hand, because most people do not quit one job without first lining up another (Mattila, 1974), high perceived ease of movement without an alternative offer may fail to result in turnover.

Finally, although general labor market conditions influence the probability of receiving an alternative job offer, the "specific mix of skills and experiences of the person in question" are at least equally important (Hulin et al., 1985, p. 239). At the extreme, one could think of a separate labor market existing for each person. Thus, although general labor market conditions should influence perceived ease of movement, the magnitude of the relation is limited to the extent that perceived ease of movement also reflects idiosyncratic differences in individual labor markets that stem from variations in skills, abilities, experience, and so on.

#### Empirical Evidence

Given that no study has included measures of both general labor market conditions and labor market perceptions, we do not know the nature of the interplay between the two in determining turnover. As a consequence, the hypotheses concerning labor market conditions described above (i.e. an indirect effect through perceptions, a direct effect, and the interaction with intention) have not been tested.

Economic time series research demonstrates that more quits occur under tight labor market conditions (Eagly, 1966; Armknecht & Early, 1972; Parsons, 1977). However, because these results are based on aggregate level data (e.g. annual national turnover), it does not necessarily follow that a comparable relation with labor market conditions exists for individual level turnover data. (See Hammond, 1973 and Roberts, Hulin & Rousseau, 1978 for a discussion of aggregation issues.)

Recent empirical work has, however, found support for the idea that general labor market conditions influence individual level turnover as well. For example, a meta-analysis by Carsten and Spector (1987) found that correlations between job satisfaction and turnover tend to be higher when unemployment is lower, suggesting an interaction such that job dissatisfaction is more likely to translate into turnover when the unemployment rate is low. Similarly, in direct studies of individual workers, Youngblood, Baysinger, and Mobley (1985) and Gerhart (1987) have found evidence of an interaction between the unemployment rate and job satisfaction (as well as a main effect for the unemployment rate) in predicting voluntary turnover.

In contrast, there has not been consistent support for a relation between labor market perceptions and individual turnover. Bluedorn (1982), for example, concluded that there was evidence for a main effect of perceived ease of movement on voluntary turnover, but a lack of evidence for an interactive effect with job satisfaction. A meta-analysis by Steel and Griffeth (1989) reported a correlation of .13 between perceived employment opportunity and turnover, also supportive

of a main effect. The review by Hulin et al. (1985), however, questioned even the existence of a main effect. They noted that although zero-order correlations between perceived ease of movement and turnover are sometimes statistically significant, the relation rarely holds up in multivariate models. Like Bluedorn, Hulin et al. also found little support for an interaction between job satisfaction and perceived ease of movement.

In summary, evidence suggests a main effect for general labor market conditions in both the economic and psychological literatures. The hypothesized interaction between individual factors (e.g., job satisfaction) and general labor market conditions in the psychological literature has also received tentative empirical support. However, the evidence on the role of ease of movement perceptions is more ambiguous. Because no study has included measures of both general labor market conditions and perceived ease of movement, it is not clear why the measures yield different results or how they operate vis-a-vis one another in the turnover process.

#### Model and Hypotheses

The purpose of the present study is to provide the first test of a voluntary turnover model that incorporates measures of both general labor market conditions and perceived ease of movement. Measures of general ability and experience are also included to help control for individual variations in opportunities.

As a point of departure, the solid lines in Figure 1 represent a model consistent with ideas expressed by March and Simon (1958) and Mobley et al. (1979a). Voluntary turnover is a function of job

satisfaction (or perceived desirability of movement) and perceived ease of movement (or "labor market perceptions"). In addition to these main effects, an interaction is specified such that low job satisfaction is most likely to be translated into actual movement when perceived ease of movement (e.g. Mobley et al.) or "economic opportunity" (e.g. Muchinsky & Morrow, 1980) is high. Moreover, Mobley et al. specify that the most immediate precursor to turnover is intention to leave/stay, which mediates the effects of other factors on turnover.

-----  
Insert Figure 1 about here  
-----

Of particular interest in the present study are the factors that affect perceived ease of movement. In their discussion, March and Simon (1958) included level of business activity (e.g. unemployment rates) and length of service (or tenure). In their view, unemployment rates were useful indicators of the number of alternative job opportunities and tenure was a proxy for the amount of firm-specific training or specialization (which would have less value at other firms). Mobley et al. (1979a) offer similar hypotheses. In other words, the unemployment rate is a measure of general labor market conditions and tenure has implications for the individual's specific labor marketability.

In addition, skills (Hulin et al., 1985) and aptitudes (Mobley et al., 1979a) may influence individual opportunities and thus perceived ease of movement. Both are linked to general cognitive ability, which is positively related to job performance (Hunter & Hunter, 1984).



Therefore, higher ability workers may have better access to other jobs. Although Youngblood et al. did not find a relation between turnover and the Armed Forces Qualifications Test (AFQT), its collinearity with education (also included in their model) may have obscured the relation. If higher ability workers do have better alternative job opportunities, perceptions should at least partly reflect this fact.

Finally, unemployment experience would seem to be highly relevant in formulating ease of movement perceptions. Such personal experience is often given a good deal of weight relative to other information. If an individual has had difficulty in finding a satisfactory job in the recent past, s/he may be less likely to believe that alternative jobs are readily available at the current time. Therefore, the number of weeks during the previous year that a person was without work, but searching for a job, is expected to influence perceived ease of movement.

Two possible modifications to the March and Simon (1958) and Mobley et al. (1979a) models are indicated by the dashed lines in Figure 1. First, a direct effect of the unemployment rate is consistent with the idea that tighter general labor market conditions may translate directly into alternative job offers, which are accepted without much prior conscious change in labor market perceptions.

Second, the hypothesized interaction between general labor market conditions and intention is designed to capture the fact that the translation of intention into voluntary turnover may depend on general labor market conditions (Muchinsky & Morrow, 1980; Steers & Mowday, 1981; Michaels & Spector, 1982). In other words, although a person may

intend to quit, s/he may not do so until another job is first lined up. Conversely, a person who does not intend to quit may do so upon the unexpected receipt of an attractive alternative job offer.

#### Method

##### Sample

The data are taken from the Youth cohort of the National Longitudinal Surveys (NLS), a national probability sample of 12,686 men and women between the ages of 14 and 21 in 1979, interviewed for the first time in 1979 with annual follow-ups (Center for Human Resource Research, 1988). The 1980 and 1981 surveys for respondents 18 years of age or older are used. Thus, respondents were ages 18-22 in 1980 (mean = 20.5) and ages 19-23 in 1981 (mean = 21.5). The latter age range accounts for approximately 14% of the U.S. labor force (Moy, 1985).

The actual sample size is 1395 because persons enrolled in school, less than 18 years of age, or working less than 15 hours in either year were excluded. These restrictions were imposed to enable a focus on workers with a strong attachment to the labor force, thus excluding what Hulin et al. (1985) described as "marginal workers and drifters" who are "unlikely to go through the cognitive processes outlined in current models" (p. 241). The actual average hours worked per week was 40.5 for 1980 and 40.8 for 1981. In 1980, for example, roughly 79% of the sample worked 40 hours or more and 95% worked 30 hours or more.

Although the sample is young, the geographic and occupational heterogeneity (well over 100 3-digit census occupations and 50 geographic regions are represented) should ensure substantial variance in general labor market conditions (and hence, perhaps perceptions as

well). Therefore, it differs from much previous research that has relied on relatively homogeneous samples from a single geographical area (e.g. Mobley, Horner, & Hollingsworth, 1978; Martin, 1979; Michaels & Spector, 1982; Hom, Griffeth & Sellaro, 1984; Mowday, Koberg, & McArthur, 1984). Parenthetically, it is also of interest to note that each of the above studies used health-care workers. Because some key hypotheses specify interactions, which typically require relatively high statistical power to detect (Busemeyer & Jones, 1983), sufficient variability and sample size are especially critical. In addition, the relatively high turnover found among young workers should help avoid the attenuation of relationships resulting from a lack of variance in the dichotomous turnover variable that would be more pronounced in a sample of older workers.

#### Measures

Dependent variable. Voluntary turnover was coded 0 if the respondent was employed by the same employer in both 1980 and 1981. It was coded 1 if the person quit voluntarily. Persons who separated because of discharges, layoffs or pregnancy were excluded from the analyses.

Independent variables. All independent variables were measured in 1980. To measure general job satisfaction, respondents evaluated a series of statements introduced with the following question: "Thinking of your present job, would you say this (statement) is very true, somewhat true, not too true, or not at all true?". The specific statements were: chance to do the things you do best, the physical surroundings are pleasant, the skills you are learning would be

valuable in getting a better job, the pay is good, the job security is good, your coworkers are friendly, your supervisor is competent, the chances for promotion are good. Note that these items tap the same general areas as widely used standardized instruments. For example, each of the 5 facets (work itself, supervision, promotion opportunity, and coworkers) of the Job Descriptive Index (Smith, Kendall, & Hulin, 1969) is represented, as well as several of the facets (ability utilization, advancement, compensation, co-workers, security, supervision-technical, working conditions) of the more detailed Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967).

Responses were factor analyzed. A widely used rule of thumb for selecting the number of common factors is to keep all with eigenvalues greater than one. This rule, however, is most applicable to selecting the number of components. Thus, a two-step procedure discussed by Cliff (1988) was used. First, a principal components analysis was performed to determine the number of factors. Two eigenvalues were greater than one (2.77 and 1.07). The fact that the eigenvalues-greater-than one rule overestimates the number of components (Zwick and Velicer, 1986), together with a desire for parsimony, pointed toward a decision to keep 1 factor. In the second step, a principal factor method was used to obtain the factor loadings. These ranged from .38 (friendly coworkers) to .57 (chances for promotion are good).

The resulting scale displayed stability among workers experiencing little change in job conditions and low stability among workers experiencing large amounts of change. Specifically, the correlation

between the satisfaction measure over a 1 year interval was .67 ( $p < .001$ ) for workers who changed neither employer nor occupation. (Note that this correlation is likely to be an underestimate of reliability due to the wide range of job and individual factors that could change over a year's time.) For those who changed both occupation and employer, the correlation was substantially lower ( $r = .25$ ,  $p < .001$ ). Finally, because the factor scores did not have an easily interpretable metric, they were converted to z scores.

Intention to stay was measured by asking "How much longer do you intend to stay at this job?" Possible responses were: 1 year or less (=1), 1 to 2 years (=2), and 3 or more years (=3).

Perceived ease of movement was measured by asking respondents "If you were to leave your current job, how difficult do you think it would be to find another job that was just as good--extremely difficult, somewhat difficult, or not at all difficult?." These responses were coded on a three point scale (3 = not at all difficult).

The unemployment rate is the 1980 average monthly county unemployment rate. These data were obtained from the Bureau of Labor Statistics. These unemployment rates ranged from 2.4% to 22.2%.

Tenure is the number of years employed with the current firm.

Cognitive ability is measured using the Armed Forces Qualification Test (AFQT), a composite of scores on tests of arithmetic reasoning, word knowledge, paragraph completion, and numerical operations, routinely administered to the NLS Youth cohort. Respondents completing the test (about 94% of the sample) received a \$50 honorarium. The mean and standard deviation of the AFQT scores were 67.8 and 20.9, respectively.

Because the metric has no clear meaning, AFQT scores were converted to z scores. Unemployment experience is the proportion of the preceding year during which the respondent was not employed, but looking for work.

### Analyses

To estimate model parameters, Joreskog and Sorbom's (1981) LISREL program was used. A test statistic (distributed as chi-square) indicates how well the model satisfies parameter restrictions imposed by the researcher. Differences in test statistics associated with nested models are themselves distributed as chi-square, thus facilitating comparison of models.

Because the statistical power of the test statistic is a direct function of sample size, a "problem" of the following type arises. "In applied work any 'well-specified' model still contains specification errors which, despite being small and irrelevant with respect to substantive theory, can significantly contribute to the value of the test statistic when the sample size is large" (Satorra & Saris, 1985, p. 83). The converse is also true--models with serious specification errors may not be rejected when statistical power is low due to a small sample size.

To facilitate evaluation of models independent of sample size, Bentler and Bonett (1980) have suggested two incremental fit indices. Recent work by Wheaton (1987) supports the usefulness of these measures. The normed and nonnormed fit indices represent the improvement obtained in using model t rather than model k, the baseline model. The normed index ranges from 0 to 1 as does the nonnormed index

in most cases. For both, the greatest improvement in model fit occurs for a value of 1. A frequently used baseline model is one of zero correlation between the observed variables. As a rule of thumb, Bentler and Bonett have suggested that fit indices of .9 or greater are typical of good-fitting models. In addition to the fit measures discussed by Bentler and Bonett (1980), Joreskog and Sorbom's (1981) goodness of fit index is also used, based on the finding by Marsh, Balla, and McDonald (1988) that it is one of the fit measures least influenced by sample size.

In describing the results of model-testing, the terminology of causal models (e.g. "effects") is useful for making causal assumptions explicit. It should be understood, however, that although patterns of results may be consistent with these assumptions, causal inferences based on non-experimental designs are tentative at best.

Because turnover is a dichotomous dependent variable, maximum likelihood estimation of the type provided by LISREL does not strictly satisfy all standard statistical assumptions (e.g. regarding normality of error terms). Consequently, to check the robustness of the LISREL estimates, the turnover equation is also estimated using PROBIT, a nonlinear estimator based on the cumulative normal probability function that is designed to handle the special case of a dichotomous dependent variable (see Hanushek & Jackson, 1977 or Pindyck & Rubinfeld, 1981 for more information).

-----  
Insert Tables 1, 2, and 3 about here  
-----

## Results

The means, standard deviations and intercorrelations for all variables appear in Table 1.

Table 2 reports goodness of fit measures for the structural models estimated. The first row pertains to the null model that is necessary for estimating the normed and nonnormed fit indices. As a general comment, the goodness of fit measures suggest that each of the substantive structural models fits the data reasonably well (despite the statistically significant chi-square statistics), comfortably exceeding the .9 rule of thumb discussed by Bentler and Bonet (1980).

The first substantive model estimated was the Mobley et al. (1979a) based-model depicted in Figure 1 (solid lines). The parameter estimates for this model appear in Table 3. Most of the predictions of the model appear to be supported. For example, perceived ease of movement is positively related to cognitive ability (AFQT), and negatively related to the unemployment rate and unemployment experience. Tenure, however, was not related to perceived ease of movement.

Intention to stay was related to perceived ease of movement and perceived desirability of movement (job satisfaction), consistent with predictions of the model. Moreover, the interaction between perceived ease of movement and job satisfaction was also statistically significant. Using the unstandardized coefficients, the interaction was plotted in Figure 2. The nature of the interaction was such that the slope of the intention to stay--job satisfaction regression line was greatest when perceived ease of movement was high, consistent with



the Mobley et al. (1979a) model. In other words, the interaction was consistent with the notion that job dissatisfaction is most likely to result in an intention to leave when employees perceive ease of movement to be high.

Next, the proposed modifications to the Mobley et al. (1979a) model (Figure 1, dotted lines) were tested. First, unrestricting the unemployment coefficient in the turnover equation resulted in a significant improvement in model fit (chi-square = 19.52,  $df = 1$ ,  $p < .01$ ), suggesting support for the hypothesis that general labor market conditions, as measured by the local unemployment rate, have an effect on voluntary turnover not entirely mediated by the cognitions measured here.

-----  
Insert Figures 2 and 3 about here  
-----

Second, freeing the coefficient for the cross-product of the unemployment rate and intention to stay in the turnover equation also resulted in a significant improvement in model fit (chi-square = 7.40,  $df = 1$ ,  $p < .01$ ), suggesting an interaction between intention to stay and the unemployment rate. The form of the interaction was such that intention to stay was most strongly associated with turnover when the unemployment rate was low, consistent with the hypothesized modification to the model (see Figure 3). For example, at an unemployment rate of 5%, a change from high intention to stay to low intention to stay was associated with a change in the turnover probability from .14 to .55--nearly a fourfold increase. In contrast,

when the unemployment rate was fairly high (15%), a similar change in intention to stay resulted in much smaller change in turnover probability (from .09 to .18).

Based on information provided by LISREL (e.g. modification indices for specific parameters), further model modifications were undertaken to improve fit. Note, however, that such modifications are essentially exploratory and should be viewed with caution given the increased possibility of capitalizing on chance. There is evidence, however, that such searches are likely to be more successful when working with large samples (MacCallum, 1986), as in the present study.

The modification indices clearly suggest two changes, both related to the tenure variable. Specifically, freeing the coefficient for tenure in the turnover equation and in the intention equation both yield statistically significant improvements in model fit (chi-square = 53.86,  $df = 1$ ,  $p < .01$ ; chi-square = 22.60,  $df = 1$ ,  $p < .01$ , respectively), suggesting direct effects for tenure. The parameter estimates for this model are reported in Table 4. Note that most of the parameter estimates are similar to those reported in Table 3. This consistency suggests that the modifications supplement the Mobley et al. (1979a) model, rather than correcting serious errors (Bentler & Chou, 1987).

-----  
Insert Tables 4, 5 and 6 about here  
-----

To more clearly see the direct and indirect (or mediated) effects of exogenous variables implied by the estimated model, a method

developed by Alwin and Hauser (1975) and automatically performed by LISREL was used. Table 5 presents these results, using both standardized and unstandardized coefficients. Because direct effects were not specified, the total effects for job satisfaction, AFQT, and unemployment experience equal the indirect effects for these variables. In contrast, the direct effects of the unemployment rate and tenure are as large or nearly as large as their total effects, suggesting that the cognitions measured here may mediate only a small portion of their effects.

Finally, to test the robustness of the LISREL estimates to violations of statistical assumptions stemming from the use of a dichotomous dependent variable, the final turnover equation was re-estimated using a PROBIT model. These estimates (Table 6), although not comparable to LISREL estimates, do indicate that the signs and statistical significance tests remain essentially the same using PROBIT estimation.

#### Discussion

On the whole, findings supported the Mobley et al. (1979a) based model summarized by the solid lines in Figure 1. Thus, for example, turnover was influenced by both the unemployment rate and perceived ease of movement. The latter, moreover, interacted with job satisfaction to influence turnover indirectly through turnover intention.

In contrast to the Mobley et al. (1979a) model, however, the relation between turnover and the unemployment rate was largely direct, rather than being mediated by perceived ease of movement and turnover

intention. In addition, the unemployment rate was found to moderate the relation between intention to stay and voluntary turnover such that the slope of the regression line was roughly twice as great when the unemployment rate was low, consistent with arguments made by Muchinsky and Morrow (1980), Steers and Mowday (1981), and Michaels and Spector (1982). Moreover, these findings cast doubt on Hulin et al.'s (1985) hypothesis that general labor market conditions influence turnover exclusively through their effect on job satisfaction.

Not hypothesized and also inconsistent with the Mobley et al. (1979a) model were the direct effects of tenure on turnover and intention. Longer tenures may reflect a high degree of organizational commitment, a good match between the employee and the job, or nonwork attachments to a particular geographic area. In such cases, even where attractive alternatives and a high perceived ease of movement exist, higher tenure employees would often choose to stay.

Based on these findings, Figure 4 depicts a model consistent with the Mobley et al. (1979a) emphasis on job satisfaction, tenure, general labor market conditions, perceived ease of movement, and turnover intentions. However, the model in Figure 4 differs from that of Mobley et al. in terms of the processes by which these variables influence turnover. The specification that the unemployment rate moderates the relation between turnover intention and actual turnover, for example, is more consistent with arguments made by Muchinsky and Morrow (1980), Steers and Mowday (1981), and Michaels and Spector (1982).

-----  
Insert Figure 4 about here  
-----

The finding that perceptions did not have a stronger role in mediating the influence of the unemployment rate is probably due, in part, to the fact (discussed earlier) that alternative job offers are often unexpected and unsolicited (Granovetter, 1974). Under such circumstances, ease of movement perceptions will typically change too quickly to be captured using traditional measurement approaches (i.e. at a single point in time). Therefore, an apparent solution would be to use continuous monitoring of perceptions as a means of detecting changes that may occur after the receipt of an alternative offer or after an unsuccessful search for another job. That continuous monitoring would be necessary, however, may suggest that an important substantive aspect of turnover decision-making is the lack of information about either the range or attributes of alternative job opportunities (Reynolds, 1951; Granovetter, 1974; Segal, 1986; Schwab, Rynes, & Aldag, 1987). This poor information is probably due, in part, to the rarity of active job search among employed workers (Rosenfeld, 1977). A consequence is instability (and thus lower observed explanatory power) of ease of movement perceptions.

One possible limitation concerns the external validity of results based on a relatively young sample. As one means of examining this issue, relations between key constructs in the current study were compared to those obtained in other research. This exercise revealed that the zero-order correlations in Table 1 for the turnover-intention and turnover-satisfaction relations were consistent with those found in meta-analyses by Steel and Ovalle (1984) and Carsten and Spector (1987). A similar comparison of the turnover-perceived ease of

movement correlation with the results of the Steel and Griffeth (1989) meta-analysis revealed a similar consistency. They reported a corrected weighted-average correlation of .13. The corresponding correlation between turnover and perceived ease of movement in the present study was .17. These similarities may suggest that the young age of the present sample did not result in unique patterns of results.

In any case, the ages studied here are very important in their own right, accounting for approximately 14% of the U.S. labor force. The importance of this age group is further demonstrated by the fact that a shortage of young workers for entry-level jobs due to the "baby bust" between 1965-1979 has become a major concern (Supple, 1986), particularly in the service sector where employers have been developing special programs to attract and retain entry-level employees (Kimmerling, 1986). Also, the fact that most turnover occurs during the first year of employment suggests that research based on young (and thus largely low tenure) employees has special relevance in designing programs to reduce voluntary turnover.

A second possible limitation was the use of a single-item measure of perceived ease of movement. Multiple item measures permit estimation of internal consistency reliability, are typically more reliable, and can offer more complete coverage of the construct domain. They also offer the opportunity to examine which aspects of alternative opportunities (e.g., quantity, quality, see Steel & Griffeth, 1989) have the most impact on turnover intentions and behaviors. Consequently, a multiple item measure would perhaps lead to even stronger support for the role of perceived ease of movement.

Future turnover research might more closely examine the Hulin et al. (1985) hypothesis that general labor market conditions influence turnover through job satisfaction. Their hypothesis that the availability of alternative jobs influences job satisfaction (and thus turnover indirectly) remains a possibility. However, the present findings suggest that general labor market conditions influence turnover through other mechanisms as well.

Future research should also continue to examine alternative measures of general labor market conditions such as the Conference Board's Help Wanted Index (e.g. Terborg & Lee, 1984) and projections from the Occupational Outlook Quarterly (e.g. Dreher & Dougherty, 1980) to determine their relevance for different types of labor markets. In the case of blue-collar and some white-collar jobs, for example, geographic-based measures may be most appropriate. In contrast, for higher level jobs, where labor markets are more likely to extend over a broader geographic area (Malm, 1954), occupational unemployment rates may be more appropriate.

Finally, whatever the appropriate measure of labor market conditions, an implication of the present findings is that such conditions may place even stronger constraints on turnover control programs than previously suggested. Such programs may appear successful when there is a general dearth of alternative job opportunities. But, as labor market conditions become more generally favorable, employees who intend to leave may actually do so in increasing numbers.

## References

- Alwin, D.F. & Hauser, R.M. (1975). The decomposition of effects in path analysis. American Sociological Review, 40, 37-47.
- Armkecht, P.A. & Early, J. F. (1972). Quits in manufacturing: A study of their causes. Monthly Labor Review, 95(11), 31-37.
- Arnold, H.J. & Feldman, D.C. (1982). A multivariate analysis of the determinants of turnover. Journal of Applied Psychology, 67, 350-360.
- Bentler, P.M. & Bonett, D.G. 1980. Significance Tests and Goodness of Fit in the Analysis of Covariance Structures. Psychological Bulletin, 88, 588-606.
- Bentler, P.M. & Chou, C. (1987). Practical issues in structural modeling. Sociological Methods & Research, 16, 78-117.
- Bluedorn, A. (1982). The theories of turnover: Causes, effects and meaning. In S. Bacharach, ed., Research in the Sociology of Organizations: Vol. 1. Greenwich, CT: JAI Press.
- Busemeyer, J.R. & Jones, L.E. (1983). Analysis of multiplicative combinations rules when the causal variables are measured with error. Psychological Bulletin, 93, 549-562.
- Carsten, J.M. & Spector, P.E. (1987). Unemployment, job satisfaction, and employee turnover: A meta-analytic test of the Muchinsky model. Journal of Applied Psychology, 72, 374-381.
- Center for Human Resource Research. (1988). NLS Handbook. Columbus, Ohio: Ohio State University.
- Cliff, N. (1988). The eigenvalues-greater-than-one rule and the reliability of components. Psychological Bulletin, 103, 276-279.
- Dreher, G.F. & Dougherty, T.W. (1980). Turnover and competition for expected job openings: An exploratory analysis. Academy of Management Journal, 23, 766-772.



- Eagly, R. V. (1965). Market power as an intervening mechanism in Phillips Curve analysis. Economica, 32, 48-64.
- Ehrenberg, R.G. & Smith, R.S. (1982). Modern labor economics. Glenview, Illinois: Scott, Foresman, and Company.
- Gerhart, B. (1987). The prediction of voluntary turnover using behavioral intentions, job satisfaction, and area unemployment rates. National Academy of Management Meeting, August.
- Granovetter, M. (1974). Getting a job: A study of contacts and careers. Cambridge, Mass.: Harvard University Press.
- Hammond, J.L. (1973). Two sources of error in ecological correlations. American Sociological Review, 38, 764-777.
- Hanushek, E.A. & Jackson, J.E. (1977). Statistical methods for social scientists. Orlando, Fla.: Academic Press, Inc.
- Hom, P.W., Griffeth, R.W., & Sellaro, L. (1984). The validity of Mobley's (1977) model of employee turnover. Organizational Behavior and Human Performance, 34, 141-174.
- Hulin, C.L., Roznowski, M. & Hachiya, D. (1985). Alternative opportunities, and withdrawal decisions: Empirical and theoretical discrepancies and an integration. Journal of Applied Psychology, 97, 233-250.
- Hunter, J.E. & Hunter, R.F. (1984). Validity and utility of alternative predictors of job performance. Psychological Bulletin, 96, 72-95.
- Joreskog, K.G. & D. Sorbom. 1983. LISREL (2nd Ed.). Chicago, Ill: National Educational Resources, Inc.
- Kimmerling, G.F. (1986). The youth market: A valuable resource. Training and Development Journal, 40(7), 59-63.
- MacCallum, R. (1986). Specification searches in covariance structure modeling.

- Psychological Bulletin, 100, 107-120.
- Malm, F.T. (1954). Recruiting patterns and the functioning of labor markets. Industrial and Labor Relations Review, 7, 507-525.
- March, J.G. & Simon, H.A. (1958). Organizations. New York: John Wiley.
- Marsh, H.W., Balla, J.R., & McDonald, R.P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. Psychological Bulletin, 103, 391-410.
- Martin, T. N., Jr. (1979). A contextual model of employee turnover intentions. Academy of Management Journal, 22, 313-324.
- Mattila, J. P. (1974). Job quitting and frictional unemployment. American Economic Review, 64, 235-239.
- Michaels, C.E. & Spector, P.E. (1982). Causes of employee turnover: A test of the Mobley, Griffeth, Hand, and Meglino model. Journal of Applied Psychology, 67, 53-59.
- Miller, H.E., Katerberg, R., & Hulin, C.L. (1979). Evaluation of the Mobley, Horner, Hollingsworth model of employee turnover. Journal of Applied Psychology, 64, 509-517.
- Mobley, W. H., Griffeth, R. W., Hand, H. H., & Meglino, B. M. (1979a). Review and conceptual analysis of the employee turnover process. Psychological Bulletin, 86, 493-522.
- Mobley, W.H., Hand, H., Baker, B., & Meglino, B. (1979b). Conceptual and empirical analysis of military recruit training. Journal of Applied Psychology, 64, 10-18.
- Mobley, W., Horner, S., & Hollingsworth, A. (1978). An evaluation of precursors of hospital employee turnover. Journal of Applied Psychology, 63, 408-414.
- Mowday, R.T. Koberg, C.S. & McArthur, A.W. (1984). The psychology of the

- withdrawal process: A cross-validation test of Mobley's intermediate linkages model of turnover in two samples. Academy of Management Journal, 27, 79-94.
- Moy, J. (1988). An analysis of unemployment and labor market indicators in 10 countries. Monthly Labor Review, 111, 39-50.
- Muchinsky, P. M., & Morrow, P. C. (1980). A multidisciplinary model of voluntary employee turnover. Journal of Vocational Behavior, 17, 263-290.
- Parsons, D.O. (1977). Models of labor market turnover: A theoretical and empirical survey. In R. Ehrenberg (Ed.), Research in Labor Economics, 188-223.
- Pindyck, R.S. & Rubinfeld, D.L. (1981). Econometric forecasts and economic models. New York: McGraw-Hill.
- Price, J. L. (1977). The Study of turnover. Ames, IA: Iowa State University Press.
- Price, J.L. & Mueller, C.W. (1981). A causal model of turnover for nurses. Academy of Management Journal, 24, 543-565.
- Reynolds, L.G. (1951). The structure of labor markets: Wages and labor mobility in theory and practice. New York: Harper & Brothers.
- Roberts, K.H., Hulin, C.L., & Rousseau, D.M. (1978). Developing an interdisciplinary science of organizations. San Francisco: Jossey-Bass.
- Rosenfeld, C. (1977). The extent of job search by employed workers. Monthly Labor Review, 100, 58-62.
- Satorra, A. & Saris, W.E. 1985. Power of the likelihood ratio test in covariance structure analysis. Psychometrika, 50, 83-90.
- Schwab, D.P., Rynes, S.L., & Aldag, R. (1987). Theories and research on job search and job choice. Research in Personnel and Human Resources Management, 5, 129-166.

- Segal, M. (1986). Post-institutionalism in labor economics: The forties and fifties revisited. Industrial and Labor Relations Review, 39, 388-403.
- Smith, P.C., Kendall, L.M., & Hulin, C.L. (1969). The measurement of satisfaction in work and retirement. Chicago: Rand-McNally.
- Steel, R.P. & Ovalle, N.K. (1984). A review and meta-analysis of research on the relationship between behavioral intentions and employee turnover. Journal of Applied Psychology, 69, 673-686.
- Steers, R.M. & Mowday, R.T. (1981). Employee turnover and post-decision accommodation processes. Research in Organizational Behavior, 3, 235-281.
- Stigler, G.J. (1962). Information in the labor market. Journal of Political Economy, 70, 94-105.
- Supple, T.S. (1986). The coming labor shortage. Demographics, 8(9), 32-35.
- Terborg, J.R. & Lee, T.W. (1984). A predictive study of organizational turnover rates. Academy of Management Journal, 27, 793-810.
- Weiss, D.J., Dawis, R.V., and Lofquist, L.H. (1967). Manual for the Minnesota satisfaction questionnaire. Minnesota Studies in Vocational Rehabilitation, Bulletin 45.
- Wheaton, B. (1987). Assessment of fit in overidentified models with latent variables. Sociological Methods & Research, 16, 118-154.
- Youngblood, S.A., Baysinger, B.D. & Mobley, W.H. (1985). The role of unemployment and job satisfaction on turnover: A longitudinal study. National Academy of Management Meeting, August.
- Zwick, W.R. & Velicer, W.F. (1986). Comparison of five rules for determining the number of components to retain. Psychological Bulletin, 99, 432-442.

Authors Notes

I would like to thank Sara Rynes for her helpful comments on this manuscript.

Table 1

Means, Standard Deviations and Correlations

VARIABLE	CORRELATION MATRIX										MEAN	SD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
TURN (1)											.27	.44
INTENT (2)	-.33										2.21	.81
JOB SAT (3)	-.11	.37									.00	1.00
PERC EASE (4)	.17	-.17	-.05								2.14	.69
UNEM RATE (5)	-.12	.31	-.02	-.16							7.19	2.34
TENURE (6)	-.22	.10	-.04	-.02	.11						1.09	.83
AFQT (7)	.05	-.05	.08	.09	-.02	-.03					.00	1.00
UNEM EXP (8)	.10	-.06	-.05	-.09	.05	-.34	-.08				.04	.11
EASE*SAT (9)	-.11	.36	.95	.05	-.02	-.03	.09	-.07			.17	1.86
INTENT*UR (10)	-.30	-.22	.25	-.22	.67	.14	-.04	-.01	.24		15.92	8.03

Note: EASE\*SAT = cross-product of PERC EASE and JOB SAT; INTENT\*UR = cross-product of INTENT and UR.

N = 1395

Note: Correlations exceeding |.06| are statistically significant at  $p < .05$ .

Table 2

Goodness of Fit Measures for Structural Turnover Models


---

MODEL	CHI-SQUARE	DF	GFI	NORMED	NONNORMED	R <sub>TURN</sub>
NULL	8220.93	45	.630	---	---	
MOBLEY ET AL.	173.03	13	.977	.979	.933	.333
UR-->TURN	153.51	12	.979	.982	.936	.349
INTENTxUR-->TURN	146.11	11	.980	.982	.933	.355
TENURE-->TURN	92.25	10	.987	.989	.955	.385
TENURE-->INTENT	69.65	9	.990	.992	.963	.400

---

Note: Each model includes all parameters in model above it; DF = degrees of freedom; GFI = LISREL goodness of fit index; NORMED = Bentler & Bonet normed fit index; NONNORMED = Bentler & Bonet nonnormed fit index; R<sub>TURN</sub> = Multiple R for turnover equation. All chi-square statistics are statistically significant (p < .01).

Table 3

Original Structural Turnover Model, LISREL Estimates


---

Variable	<u>Dependent Variable</u>					
	PERC EASE		INTENT		TURN	
	(1)		(2)		(3)	
	B	SE	B	SE	B	SE
INTENT					-.334**	.025
PERC EASE			-.044**	.012		
JOB SAT			.234**	.077		
TENURE	-.021	.028				
AFQT	.078**	.026				
UNEM RATE	-.147**	.027				
UNEM EXP	-.086**	.028				
PERC EASE x JOB SAT			.153*	.077		
INTENT x UNEM RATE						
R	.195		.383		.333	

---

Note: N = 1395; B = standardized structural coefficient; SE = standard error

\* p < .05, one-tailed.

\*\* p < .01, one-tailed.



Table 4

Modified Structural Turnover Model, LISREL Estimates


---

<u>Variable</u>	<u>Dependent Variable</u>					
	PERC EASE		INTENT		TURN	
	(1)		(2)		(3)	
	B	SE	B	SE	B	SE
INTENT					-.518*	.082
PERC EASE			-.044*	.012		
JOB SAT			.247*	.076		
TENURE	-.021	.028	.117*	.025	-.184*	.025
AFQT	.078**	.026				
UNEM RATE	-.147**	.027			-.279**	.075
UNEM EXP	-.086**	.028				
PERC EASE x JOB SAT			.144**	.076		
INTENT x UNEM RATE					.290**	.110
R	.195		.401		.400	

---

Note: N = 1395; B = standardized structural coefficient; SE = standard error

\* p < .05, one-tailed.

\*\* p < .01, one-tailed.

Table 5

Total and Direct Effects of Purely Exogenous Variables on  
Voluntary Turnover

---

<u>Variable</u>	STANDARDIZED ESTIMATES		UNSTANDARDIZED ESTIMATES	
	<u>Total Effect</u>	<u>Direct Effect</u>	<u>Total Effect</u>	<u>Direct Effect</u>
UNEM RATE	-.283	-.279	-.053	-.053
TENURE	-.245	-.184	-.132	-.099
JOB SAT	-.128	<sup>a</sup>	-.057 <sup>b</sup>	<sup>a</sup>
AFQT	.002	<sup>a</sup>	.001 <sup>b</sup>	<sup>a</sup>
UNEM EXP	-.002	<sup>a</sup>	-.001	<sup>a</sup>

---

Note: N = 1395

<sup>a</sup>No direct effect included in the model.

<sup>b</sup>Job satisfaction and AFQT scores are standardized. Thus, coefficient indicates change in turnover probability for each standard deviation change.

Table 6

Final Structural Turnover Equation, PROBIT Estimates

---

<u>Variable</u>	b	SE
INTERCEPT	1.824***	.361
INTENT	-.773***	.164
TENURE	-.400***	.085
UNEM RATE	-.127***	.049
INTENT x UNEM RATE	.032*	.022

---

Note: N = 1395; b = coefficient; SE = standard error

\* p < .10, one-tailed

\*\* p < .05, one-tailed.

\*\*\* p < .01, one-tailed.

Figure Caption

Figure 1. Proposed Structural Model of Voluntary Turnover

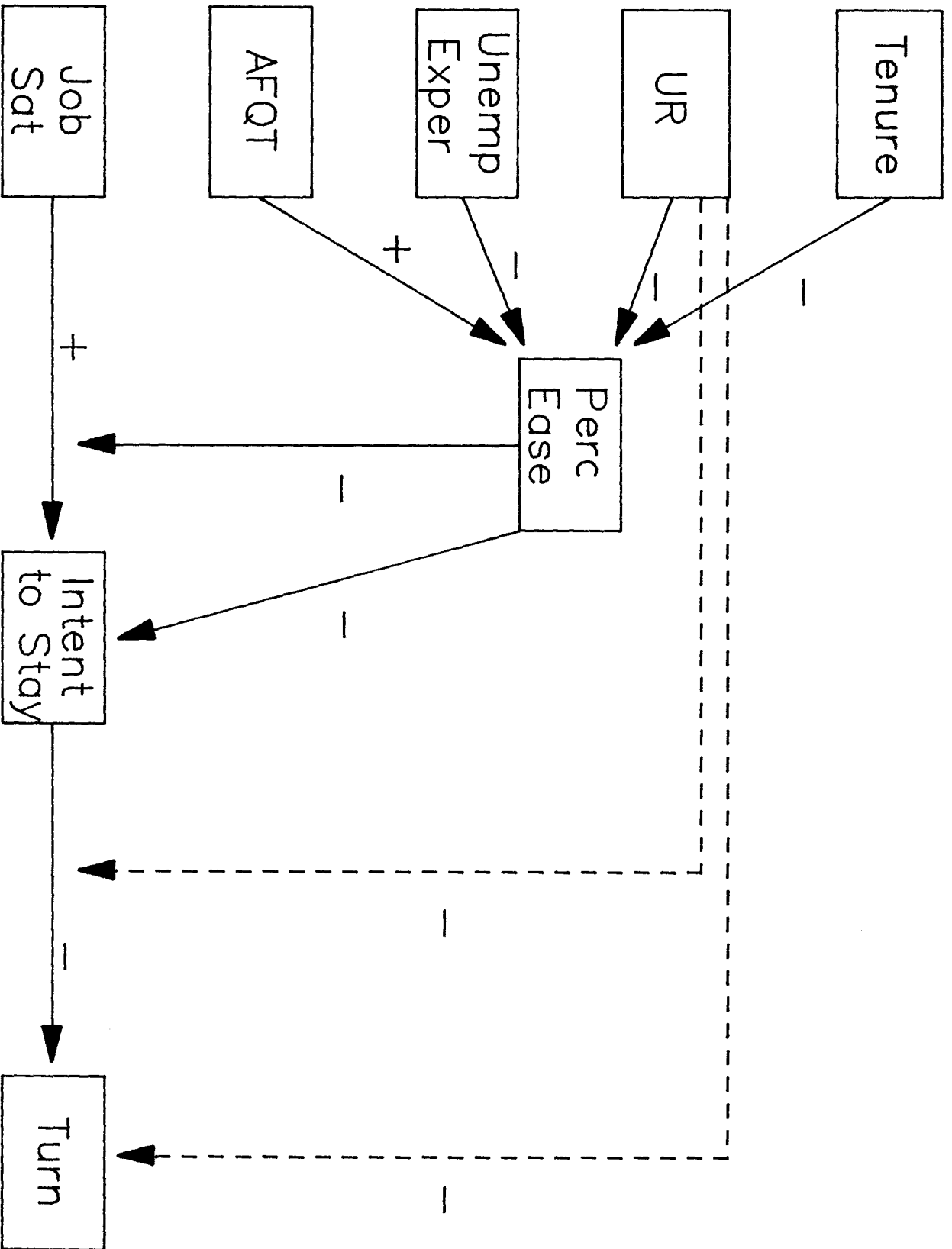


Figure Caption

Figure 2. Interaction between Job Satisfaction and Perceived Ease of  
Movement and Predicted Intention to Stay

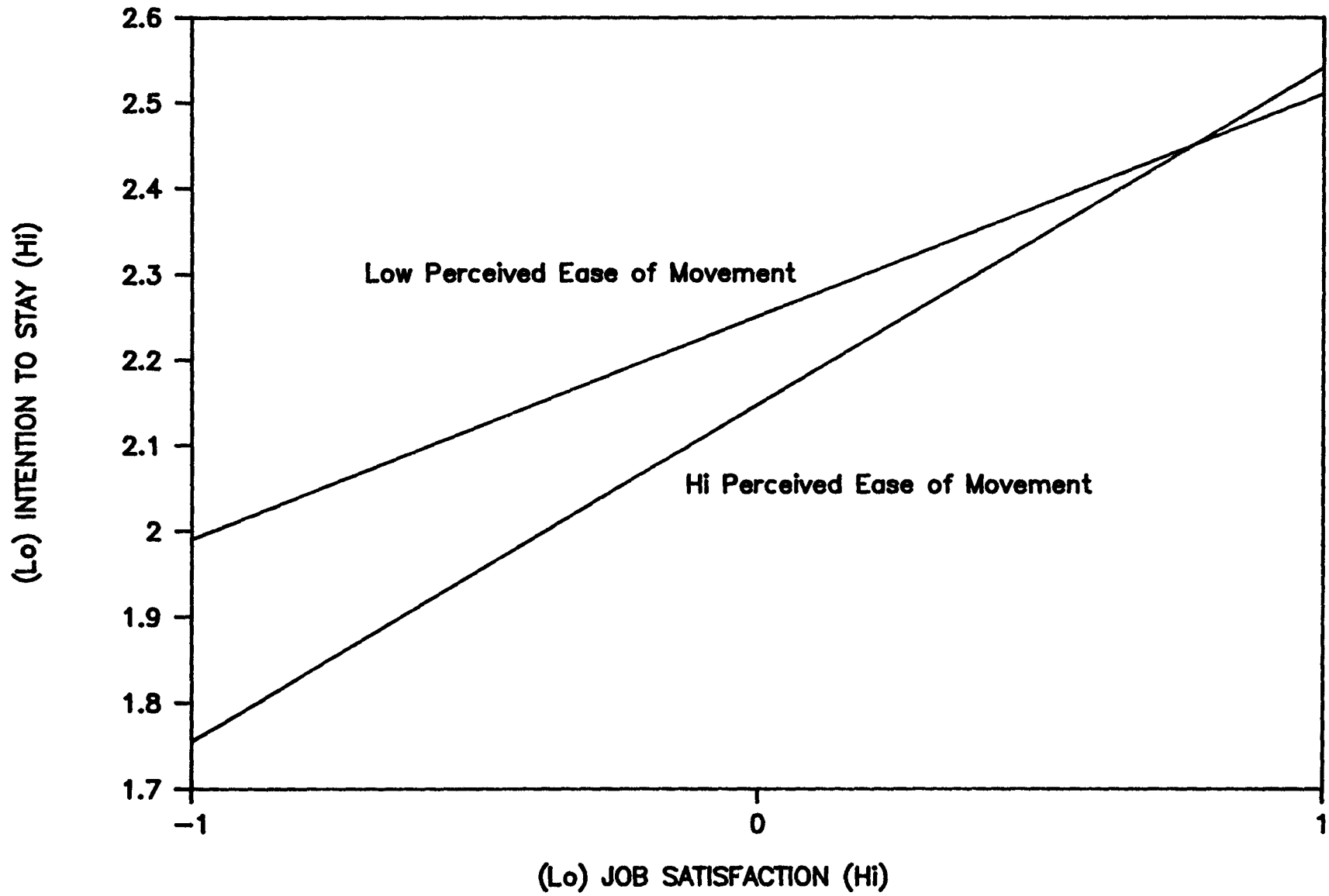


Figure Caption

Figure 3. Interaction between Intention to Stay and the Unemployment  
Rate and Predicted Turnover Probabilities



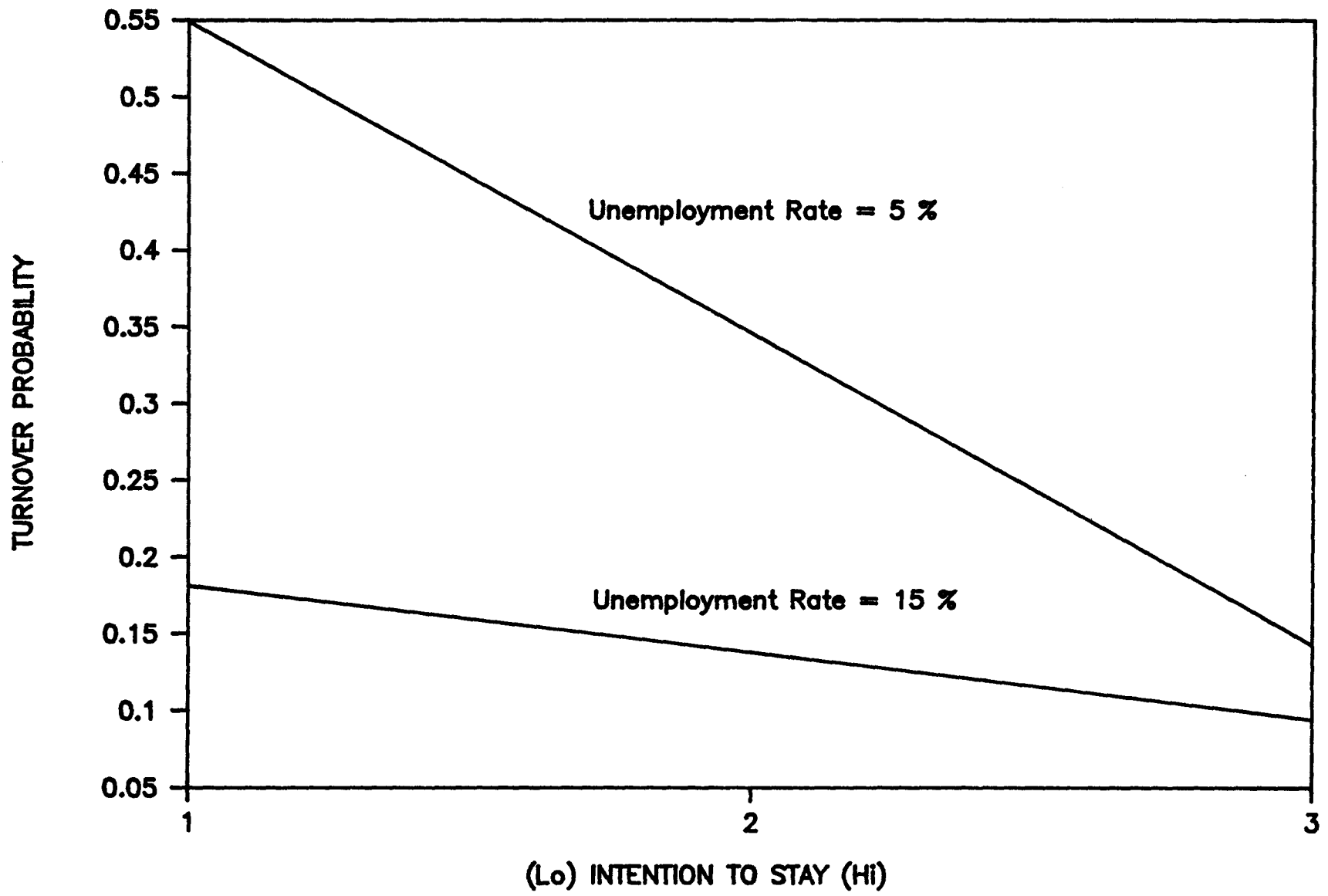


Figure Caption

Figure 4. Final Structural Model of Voluntary Turnover

