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Evidence from Singapore**

by

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Determinants of Job Turnover Intentions: Evidence from Singapore

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Abstract: This paper explores both observable and unobservable variables that would affect employed workers' decisions on job change. We find that age, job satisfaction, satisfaction with working environment or job security, and firm size are among the major factors determining workers' intentions of job-to-job mobility. Younger workers and workers in smaller firms are more likely to look for other jobs. We also find that men are more likely to consider a change in job than women, but when "actually looking for another job" is concerned, men and women do not differ. Furthermore, monthly income and working sector contribute significantly to looking for other jobs.

Keywords: Voluntary job-to-job mobility; Job satisfaction; Logistic regression model

JEL Classification: J60; J63; C25

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1. Introduction

Job-to-job mobility is different from the transitions from unemployment to employment. Employed workers cannot make full-time job searching, and they may not take another job if the new offer is not better than the incumbent one. More importantly, not every employed worker is looking for other jobs (see e.g., Hartog, Meekelholt, and Van Ophem, 1988). For employed workers, intentions of changing their jobs result in job turnovers, although not every employed worker who intends to change his job can successfully do it. Why are the employed workers searching for other opportunities? What are the determinants that affect employed workers' intentions to change their jobs? This study attempts to answer these questions by investigating the determinants of turnover intentions in a labor market.

Most of the empirical studies on job mobility are based on observable variables, such as age, job tenure, monthly income, and education level. Viscusi (1980) showed that younger workers and workers with shorter tenure were more likely to quit. Topel and Ward (1992) found that the role of job mobility was an important element of career development among young workers. Groot and Verberne (1997) investigated voluntary job-to-job mobility and its determinants in Dutch labor market. They found that all factors determining job mobility became more unfavorable to job change when workers got older. Thus older workers were less likely to change jobs, and so were workers who had worked for a longer period of time with their current employer since tenure increased the cost of job mobility. Burgess and Rees (1997) found the same results for the British labor market. Their explanations were based on a "life-cycle story", that is., workers engage in job searching while they are young, and eventually find a good match and stay in that job for a long time.

A theoretical study by Jovanovic (1979) suggested a positive relation between education and job mobility. Yet empirical studies have showed somehow contradictory results on the effect of education on job mobility. Weiss (1984) found that better-educated workers had

lower probability of quitting their jobs, although education could improve alternative opportunities of workers. Many other studies also found that education was negatively correlated with job mobility (see e.g., Johnson, 1978; Mincer and Jovanovic, 1981; Gruber and Madrian, 1994). However, Blau and Kahn (1981) found that education had no significant effect on men's quitting rate, while the effect was positive on women's quitting rate. Royalty (1998) noted that education-induced changes in job turnover behavior might differ by sex. She found that less-educated women had lower job-to-job turnover, while well-educated women were very much similar to men in their turnover behavior. Thus, the different rates of job turnover between men and women were due to the different behavior of less-educated women.

Relative to the literature on job searching, there are few works studying job change intentions (e.g., Hartog, Mekkelholt, and Van Ophem, 1988; Banerjee and Gaston, 2004; Joseph, Pierrard, and Sneessens, 2004; Sousa-Poza and Henneberger, 2004; Dostie, 2005). Among them, Sousa-Poza and Henneberger (2004, pp.113) claimed that a topic strongly related to job mobility is the "turnover intention", which reflects the (subjective) probability that an individual will change his or her job within a certain time period. They compared the turnover intentions in twenty-five countries and found that in many cases, the determinants of job-turnover intentions were the same as those observed in many studies on actual turnovers. They also found that some countries did have higher job-turnover intentions than other countries, although the high turnover intentions may not be explained by the same subjective determinants.

Voluntary job-to-job mobility is to look for a better job when employed workers are not satisfied with their current jobs for pecuniary and/or non-pecuniary reasons. Besides age, gender, monthly income, and education level, the intentions of changing employment may also be affected by unobservable and subjective variables. For example, it is possibly the

expected wage level rather than the actual monthly wage that affects a worker's decision on changing employment (see e.g., Burdett 1978). Whether or not workers are satisfied with their jobs also affects their decisions on job change, and so do other non-financial aspects of jobs. It is interesting to see how these unobservable factors determine job mobility.

However, partly because of difficulties in measuring and identifying unobservable and subjective variables, relatively fewer studies have been done to explore correlations of subjective factors (such as job satisfaction) to job mobility.¹ One of the earliest studies on investigating subjective variables that may determine job mobility was done by Freeman (1978), who found that job satisfaction altered the overall level of job mobility by affecting job quitting. Using data on British workers, Clark and Oswald (1996) tested the hypothesis that utility depends on income relative to a reference level. They found that workers' reported job satisfaction levels were inversely related to their reference wage level, and satisfaction was declining with the level of education. Recently, Clark, Georgellis, and Sanfey (1998) found that workers with higher job satisfaction were less likely to quit than those with lower satisfaction. Hamermesh (2001) empirically investigated the distribution of job satisfaction among workers with different wage levels. He found that job satisfaction was not simply based on actual wages although the distribution of job satisfaction widened with the growing inequality of earnings.

This study explores both observable and unobservable variables that would affect employed workers' intentions of job changes, based on primary data collected through one-to-one interviews conducted in Singapore. Two sets of logistic regression models are presented in our analysis. The first set estimates one's consideration (intention) towards a job change. The second estimates the behavior of employed workers who were actively looking

¹ Hamermesh (2001) observed that "economists have traditionally been loath to deal with subjective outcomes describing work", although he noted that economists had not "remained entirely aloof from this area."

for other jobs. Our regression analysis will identify determinants of job turnover intentions. We will also examine the motivations behind the choices of those who want to leave their current employment and the reasons for others who do not want to change their employment.

Our data indicate that about 42 percent of interviewees showed their intentions to change their employment, but only 12 percent of them were actually looking for other jobs. The econometric analysis on the collected data shows that age, job satisfaction, satisfaction with working environment or job security, and firm size are among the major factors determining workers' job-to-job mobility. Younger workers and workers in smaller firms are more likely to look for other jobs. Workers with lower level of job satisfaction are more likely to consider a change in employment and to actively look for other jobs, and workers with lower level of satisfaction with their working environment or job security are more inclined towards both considering and actively looking for a change in employment. Thus, job satisfaction exerts an essential influence on workers' job searching behavior. We also find that men are more likely to consider changing jobs than women, but when the issue concerns whether actually looking for another job, men and women do not differ significantly. Furthermore, monthly income and working sector contribute significantly to actively looking for another job but not to considering a change of job.

This paper is organized as follows. Section 2 outlines the survey procedure and presents a summary of the collected data. Section 3 describes our estimation models. Section 4 presents our empirical results and discusses the determinants that affect individuals' decisions of considering job changes and actually looking for other jobs. Section 5 discusses the reasons for respondents' respective decisions of either leaving or remaining in their current jobs. Section 6 concludes this paper.

2. Survey on Job Mobility and Summary of Data

2.1. The Survey

To investigate the determinants of job turnover intentions, our questionnaire incorporates observable and unobservable aspects that may affect one's decision on job change. The intention of job changes is measured by two binary variables: considering a change in employment and actively looking for other jobs, which will be analyzed separately in the subsequent sections.

A preliminary survey was first conducted to test the feasibility of such a study as well as the responsiveness of those interviewed. With valuable comments obtained from the first group of interviewees, a few amendments were made and the questionnaire was revised accordingly. The formal survey process started in the fourth week of November and was completed by the end of December 1998 in Singapore.

The survey was conducted on a random basis, excluding the self-employed, the employed on a part-time basis, and the unemployed as well. The survey was conducted personally, on a one-to-one basis, with the assistance of our research assistants. Respondents were given a choice of being interviewed while their responses were being recorded, or they were guided through the questionnaires if they felt more comfortable filling them up on their own. Where a certain section was incomplete, they were asked politely to furnish the relevant information for the accuracy of the study. However, some respondents failed to produce valid questionnaires and were thus excluded from the effective sample.

2.2. Summary of the Data

A total of 965 completed questionnaires were found to be valid. People in the sample were all full-time workers. Table 1 presents the basic data categorized by gender and age. It shows that the overall numbers of males and females in the sample are about the same. Most

of the people are in the age groups between 20 and 49. There are relatively more younger-females (aged 18 to 29) and relatively more older-males (aged 50 to 65) in the sample.

Table 1 here

It was found that out of the 965 individuals, 402 of them (42%) were considering a change in employment. Furthermore, 200 out of these 402 individuals were males. It is evident from Table 2 that younger workers (both males and females) are more likely to considering changing their jobs.

Table 2 here

From the sample, out of the 402 respondents who considered a change in employment, 117 of them were actually searching for other jobs, making up about 12 percent of the entire sample. As shown in Table 3, younger female workers are more likely to be actively searching for other jobs, but such a pattern is not observed for male workers.

Table 3 here

It is important to reinforce the fact that, in this study, an individual considering a change in employment is not the same as an individual actively looking for another job. However, the one who was actively looking for another job must also be the one who stated considering a change in employment. In our data set, 42 percent of workers were considering changing jobs, yet only 12 percent were actively looking for other jobs.

3. The Model

We will estimate two actions: a) considering a change in employment, and b) actively looking for another job. In our analysis, the two dependent variables, job change decisions, take only two values: 0, implying not considering or actively looking for another job, and 1, implying considering or actively looking for another job. This is a case of a dichotomous (binary) dependent variable. The logistic regression model can be used to investigate the

relationship between a binary response and a set of explanatory variables. The model takes the following general form:

$$g(\pi_i) = \alpha + \sum_{j=1}^k \beta_j X_{ij}, \quad i = 1, \dots, n, \quad (1)$$

where π_i is the probability of considering a change in employment or actively looking for another job for the i th individual, $g(\cdot)$ is a function that “links” this probability to a set of explanatory variables X_1, X_2, \dots, X_k , α is the intercept, and β s are the regression coefficients. Because π_i assumes values from 0 to 1, but the X s can assume values in the entire real line, the link function has to be able to translate the $[0, 1]$ domain to the whole real line. A natural choice of this function is the inverse of some cumulative distribution function with a domain of the whole real line. Thus, the common link functions include the logit function,

$$g(\pi_i) = \log \frac{\pi_i}{1 - \pi_i}, \quad (2)$$

which is the inverse of the cumulative logistic distribution function; the probit function,

$$g(\pi_i) = \Phi^{-1}(\pi_i), \quad (3)$$

which is the inverse of the cumulative standard normal distribution function, and the complementary log-log (clog-log) function,

$$g(\pi_i) = \log[-\log(1 - \pi_i)], \quad (4)$$

which is the inverse of the cumulative extreme-value distribution. The resulted models will be referred to, respectively, the *logit model*, *probit model*, and *clog-log model*.

In the general logistic regression models, the coefficients do not measure directly the change in the probability of an event occurring as a result of a unit change in the value of one explanatory (independent) variable while the others being kept constant. Under the logit link, they are associated with the changes in *odds* ($\pi_i/(1-\pi_i)$) of the response 1, in particular, the odds of “considering a job change” increases multiplicatively by a factor of e^{β_j} for every

one-unit increase in X_j , while other explanatory variables are held constant.² As for the commonly used economic measure: the marginal effect of a unit change in X_j on π_i , it has the form of $\beta_j \exp(-Z_i) / [1 + \exp(-Z_i)]^2$ under the logit link, $\beta_j \phi(Z_i)$ under the probit link, and $\beta_j \exp(Z_i - \exp(Z_i))$ under the complementary log-log link, where $Z_i = \alpha + \sum_{i=1}^k \beta_j X_{ij}$ and $\phi(\cdot)$ is the probability density function of the standard normal variable.

Note that unlike the case of linear regression model where the marginal effect is just the regression coefficient not depending on the actual values of X , the marginal effect for logistic regression is the regression coefficient times a factor that depends on the values of the explanatory variables. Note also that the link function is monotonic increasing, hence the direction of the effect of a change in X_j depends on the sign of the β_j . Positive values of β_j imply that increasing X_j will increase the probability of having the response 1; negative values imply the opposite. However, the magnitude of the change depends on the actual values of all the X variables.

Table 4 summarizes the definitions of the two dependent variables and a set of potential independent variables that are derived from the survey questionnaire. Some independent variables take on binary values, such as sex, education level, and working sector; and some take on ordinal levels such as all the satisfaction levels. Income and firm size also enter the model as ordinal variables. More over, the two quadratic terms: IncomeSq (= Income²) and SizeSq (= Size²) are also considered.

Table 4 here

4. Empirical Results

² The fact that the coefficients are directly related to odds-ratio makes the use of the logit link more attractive. The other advantage of logit link is that differences on the logistic scale are interpretable regardless of whether the data are sampled prospectively or retrospectively. See Agresti (1996) for detailed discussions.

To see if our results are robust with respect to different model specifications, we test the two actions with all three links. Table 5 summarizes the results of logistic regression analysis for the CONSIDER (considering a change in employment) variable and Table 6 summarizes the results for the LOOK (actively looking for another job) variable. Among the reported results are the estimates of the regression coefficients and their standard errors. The tables also include a R^2 value, a Hosmer-Lemeshow goodness-of-fit test (Lackfit), and the maximized log likelihood. The definition of R^2 is given by Nagelkerke (1991) who modified that defined by Cox and Snell (1989, pp. 208-209), so that a maximum value of 1 is possible.

Tables 5 and 6 here

We now summarize some general observations from the results given in Tables 5 and 6. First, all the models fit the data quite well as judged by the R^2 values and the Hosmer-Lemeshow goodness-of-fit tests. Second, all three links result in rather similar models for both the CONSIDER response and the LOOK response, and most of the variables are quite robust to the link specifications. Third, some variables are statistically significant to one response variable, but become insignificant to the other. For example, sex is highly significant to CONSIDER, but is not significant in the model for LOOK. This indicates that “considering a change of job” and “actively looking for another job” may be two different issues.

4.1. The regression analysis on consideration of changing jobs

From Table 5, we see that age variable has a negative coefficient that is highly significant for all three models. This means that an older worker is less likely to think about changing jobs as compared to a young worker. The quantitative effect of age on CONSIDER can be seen directly from the logit model. For example, for workers who are five years younger, it is estimated that the odds of considering a change of employment is increased by 35 percent ($100(e^{5 \times 0.0597} - 1)\% = 35\%$).

The sex variable has a significant positive coefficient, implying that males have a higher likelihood of considering changing jobs. Based on the logit model, the odds for a male to consider a change in employment is $e^{0.6506} = 1.92$ times that of a female (a 92% increase)³. In other words, the odds-ratio of male and female in considering a change in employment is estimated to be 1.92. The 95% Wald confidence interval for the true odds ratio has lower and upper limits 1.333 and 2.756 (see Table 7). The interval does not cover 1, indicating the odds of response 1 for males is different from that of females. This result coincides with the traditional belief that males tend to be more ambitious and have higher expectations in jobs.

Table 7 here

Although the variables of education levels are all positively correlated to the independent variable, they are statistically insignificant from the estimated models presented in Table 5. However, detailed analysis shows that effects of education levels may be partially confounded with other factors, such as satisfaction factors. By fitting a simpler model with age, sex and three education dummies only, we find that the EduPri dummy is significant at 1% level with a positive coefficient. This means that workers with primary school education are more likely to change job than workers with higher education levels. Many empirical studies have showed that a better-educated worker will be less likely to change jobs (see e.g., Johnson, 1978; Mincer and Jovanovic, 1981; Weiss, 1984; Gruber and Madrian, 1994; Checchi, 1997). Thus, this conclusion is supported by our data as well.⁴

The variable of overall job satisfaction is negatively correlated to one's intention of changing employment and is statistically significant in all three models. This means that an individual with a higher level of job satisfaction is less likely to consider a change in

³ This number can also be estimated based on models with other links by first estimating the probabilities and then converting the probabilities into odds, but the estimates are no longer independent of X .

⁴ We have also tested if well-educated people have higher satisfaction level but found no significant correlation between them. Actually, our results suggest that job satisfaction is independent of many observable variables, such as age, education, and wage levels.

employment. For one level decrease in job satisfaction, there is a $100(e^{0.3657}-1)\%=44\%$ increase in the odds of considering a change of job as estimated from the logit model.

The overall job satisfaction level would be determined by both financial and non-financial factors. We next break down overall job satisfaction into a few more detailed factors. We find that all the levels of detailed satisfactions are negatively related to the consideration of job change. The coefficient of level of satisfaction with salary and bonuses or INC implies that a worker who is less satisfied with his level of income is more likely to consider a job change. This variable is statistically significant at 5% level in the model with clog-log link.

The variable of level of satisfaction with fringe benefits (BEN) has a negative sign and is statistically significant. An individual who is less satisfied with benefits, such as paid leave and medical insurance, is more likely to think about leaving. The estimated increase (from the model with logit link) in the odds of considering a change in employment by one level decrease in BEN variable is 57%.

Likewise, the satisfaction of working environment or ENV has significantly effect on one's intention to change jobs. This result shows that an individual who is very contented with his working environment is very likely not to consider changing employment. Job security is also statistically significant in determining one's consideration on job change. It is found that an individual having a higher level of satisfaction with his current job security will be less likely to consider job change.

The variables Ideal, Size and SizeSq are all statistically significant. This shows that a worker who thinks his job is ideal is less likely to consider changing his job and that employed people in smaller firms are more likely to consider changing employment. The negative coefficient of Size and positive coefficient of SizeSq (with a much smaller magnitude) show that the rate of decrease in odds of considering a job change slows down with the increase of firm size.

4.2. *The regression analysis on actively looking for other jobs*

Similar to the results from testing consideration of job change, age has very significant negative impact on workers' likelihood of looking for other jobs. Consistent with the results of early studies (e.g. Jovanovic, 1979, 1987; Madrian, 1993; Burgess and Rees, 1997; Groot and Verberne, 1997), this result shows that younger workers are more likely to look for other jobs. In the process of changing jobs, the wages of young people will increase but the gains decline with ageing (see e.g., Mincer, 1986).

Education levels are insignificant in the models presented in Table 6, but become significant in a smaller model with only age, sex and three education dummies in the model (EduPri is significant and has a positive coefficient). Unlike the case of considering a job change, there is no significant difference between men and women in their likelihood of looking for other jobs. This statistical insignificance of sex implies that although men are more likely to *consider* changing their jobs, the probability for them to actually look for other jobs is not higher than women. A possible explanation is that although men wanted to change employment, they knew that the job market was not good during the economic recess when unemployment rate was high. Therefore, they were not actually searching for other jobs.

The sign of income variable (quadratic term of it) is positive and statistically significant in all three models. This result suggests that a worker with higher wage is more likely to look for another job. One possible explanation is that whether a person is satisfied with his payment is determined by his expected rather than actual wage. A person earning high wage may be compensated for undesirable working conditions or is high qualified and has more alternative opportunities.

Consistent with other empirical evidence (e.g., Freeman, 1978; Clark, Georgellis, and Sanfey, 1998), there is a negative correlation between the level of job satisfaction and the probability of looking for other jobs. The higher job satisfaction level an individual indicates,

the less possible he will search for another job. For one level decrease in job satisfaction, there is a $100(e^{0.404}-1)\% = 50\%$ increase in the odds of actively looking for other jobs as estimated from the model with logit link.

From Table 6, we also see that working environment variable is negatively related to an individual's action of looking for another job and is also statistically significant. Clearly, one who is more satisfied with working environment has a lower probability of searching for another job. Job interesting may also affect one's decision on job change. But our results show no statistically significant relationship between job interesting and job looking.

As can be inferred from Table 6, the variable of satisfaction with job security has a negative coefficient and is statistically significant. An individual who perceives his job as not secure, i.e. he feels that he may lose his job anytime, will have a higher likelihood of searching for another job.

Our finding also shows that workers in larger firms are less likely to look for other jobs. This result is consistent with Topel and Ward (1992) who found that the turnover rate in small firms was much higher than that in large firms. One possible explanation is that bigger firms have better working environment or offer better fringe benefits and enriched jobs.⁵

5. Further Evidence on Job Turnover Intentions

Why do many people remain in their jobs while others are more mobile between jobs? What are the motivations that cause them to leave or remain in their current jobs? To address these issues, the survey posted two questions: *reasons contributing towards decision on changing employment*, and *reasons contributing towards decision on remaining in current employment*, which are analyzed in detail below.

⁵ McEvoy and Cascio (1985) found that job enrichment was significantly negatively correlated with voluntary job change.

5.1. Reasons contributing towards decision on changing employment

This survey was conducted during an economic recess in Singapore when unemployment rate was historically high. In spite of the poor economic outlook and gloomy labor market, there were still 117 respondents (12%) who were actively searching for other jobs. Intuitively, a person would love to have a job change if there are attractive aspects of a potential new job. However, there must be some “pushing” or undesirable factors in the current job that trigger job searching. These factors represent unpleasant aspects of the current job that actively repel the individual from the job.

A list of possible reasons was given in the questionnaire for the respondents to choose from. These reasons are 1) company financially unsound, 2) company relocating out of Singapore, 3) transportation problems, 4) poor working environment, 5) excessive work pressure, 6) salary paid below expectations, and 7) working hours too long. The results of 6 most chosen reasons are presented in Table 8.

Table 8 here

“Salary paid below expectations” was the most common reason given by the 117 respondents who were actively searching for other employment. 61% of them had listed this as one of the major reasons for their decisions. They felt that they were not paid what they deserved for the work done.

“Poor working environment” emerged as the second common reason for looking for other jobs. 39% of the 117 respondents who were looking for other jobs gave this as one of the reasons. 32% of those who were looking for others job had indicated that their working hours were too long. The next reason to explain why people search for other jobs is excessive work pressure. 31% of them gave this as one of their reasons. These people found their workload was too much to handle and too taxing as well.

15% of them stated that one of the reasons they were looking for another job was because their current companies were financially unsound. There is a possibility that the company was declared bankrupt or that the owner was thinking of winding up the business because of losses. Thus instead of waiting for the company to fold, they would want to find a job elsewhere if they could. Another reason to explain why individuals are looking for another job is because of the inconvenience they faced having to get to work. 9.4% of them felt that they encountered transportation problems and so they wanted to find another job that would be closer to their homes and incur less traveling time.

5.2. Reasons contributing towards decision on remaining in current employment

As noted earlier, about 88% of the respondents remained in their current jobs although many of them had intentions of changing jobs. What could be the possible motivations behind these 848 respondents who were remaining in their current jobs? Six possible reasons were provided to the respondents to choose from, including 1) contentment with current job, 2) difficulty in getting a better job, 3) poor economic outlook, 4) too much risks involved in being self-employed or starting own business, 5) insufficient funds to start own business, and 6) lack of qualifications or skills. A summary of the data is given in Table 9.

Table 9 here

A main reason that the respondents gave for staying on with their jobs is the poor economic outlook. Out of the 848 respondents, almost half of them (47%) had indicated it as one of the reasons that induced them to remain in their current jobs. Many of those interviewed expressed that they would not harbor thoughts of changing jobs during recessionary times. They understood that they should not be too picky about their jobs during the bad times.

Another reason that explains why people remained in their jobs is contentment. 45% of the 848 respondents stated that they were contented and hence they were remaining in their

current jobs. More than half of the respondents (51.8%) had expressed that they were currently holding their ideal jobs and had no intentions to move.

About 33% of the respondents listed the difficulty in getting a better job as one of the factors that contribute towards their decision of staying in their jobs. This reason is related to “poor economic outlook” explained before. Due to the gloomy labor market, they knew that it would be difficult to find a better job. Therefore, the best option would be to remain in their current jobs, until the economy and the labor market start to pick up.

The next reason that explains why people are remaining in their jobs is that they realized their limited potential of getting a better job, given their level of qualification or skill. 19% of those who were staying in their jobs felt that they were lack of the necessary qualifications or skills and could not get a better job.

17% of the 848 respondents were not changing jobs because they wanted to start their own business but lacked the capital or funds to do so. Besides the lack of capital to start an own business, some respondents felt that it was too risky to start own business. It was found that 12% respondents included this as one of the reasons for staying in their current jobs.

The most common reason given for one to remain in his job is the unsatisfactory current economic situation. The 1997 financial crisis has a deep impact on Singapore economy and as sentiments are weak at the moment, only a handful of individuals are actually looking for jobs. On the other hand, the most common reason given for job searching is that salary was paid below expectations. Many of them were not satisfied with the amount of salary, and looking for another job may increase their chance of earning higher wages.

6. Conclusion

We examine both observable and unobservable variables that would affect employed workers' intentions of changing jobs. Consistent with other empirical results, we find that age is highly significant in determining job turnover in both sets of models with negative coefficients. The older the workers, the less likely they consider or actively look for another job. Firm size is also a determinant that affects intentions of job change; workers in smaller firms are more likely to consider or look for other jobs. Furthermore, we find that although males are more likely to consider a change in jobs, there is no statistically significant difference between male and female workers in actively looking for other jobs. Significance of education levels does not show up in the models presented in Tables 5 and 6, but shows up in smaller models with age, sex, and three education dummies as explanatory variables.

This study also uncovers interesting results to supplement the limited research on unobservable variables that may affect voluntary job-to-job mobility. We find that job satisfaction is a major determinant of workers' intentions of changing employment. In general, the higher the satisfaction levels, the less are the chances of considering changing employment, and the less are the chances of actively looking for new jobs. Our results also show that workers with lower levels of satisfaction with working environment or job security are more inclined towards changing their jobs.

We have explored why employed workers want to change their jobs. But a person who is looking for another job may not really get it. That is, we do not investigate those workers who have successfully changed their jobs, as many other empirical studies do. Such a study is important in uncovering subjective variables that may affect firms' performance. Since job turnover is costly to firms, understanding what accounts for workers' intention of changing jobs can help firms in retaining qualified workers, planning their on-the-job training, and improving firms' productivity.

We conclude the paper by discussing two important variables: *working experience* (in years) and *job tenure* (measured by number of years in current job). These two variables are highly correlated with the age variable with Pearson correlation coefficients being 0.918 and 0.710, respectively. Further, they are also highly correlated between themselves with Pearson correlation coefficient 0.753. Thus, the existence of the age variable in the model prevents either or both variables in the model (i.e., not significant). Our analyses show that if age variable in the models presented in Tables 5 and 6 is replaced by working experience or job tenure, then working experience or job tenure becomes significant. Hence, working experience and job tenure are also the determinants of job turnover intentions, but their effects are contained in the age variable.

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Table 1. Stratification of the Sample by Age and Gender

Age Range	Male	Female	Total
18-19	1	11	12
20-29	227	293	520
30-39	118	116	234
40-49	75	72	147
50-59	38	12	50
60-65	2	0	2
Total	461	504	965

Table 2. Males and Females Who Were Considering Changing Employment

Age Range	Male (Percentage)	Female (Percentage)	Total (Percentage)
18-19	1 (100.00)	8(72.73)	9(75.00)
20-29	123(54.19)	146(49.83)	269(51.73)
30-39	42(35.59)	27(23.28)	69(29.49)
40-49	28(37.33)	20(27.78)	48(32.65)
50-59	5(13.16)	1(8.33)	6(12.00)
60-65	1(50.00)	0(0.00)	1(50.00)
Total	200(43.38)	202(40.08)	402(41.66)

Note: Percentages are calculated by taking the number of male (female, or total) respondents who have intention of changing jobs divided by the number of male (female, or total) respondents within the same age range.

Table 3. Males and Females who were Actively Looking for other Jobs

Age Range	Male(Percentage)	Female(Percentage)	Total (Percentage)
18-19	0(0.00)	3(27.27)	3(25.00)
20-29	33(14.54)	45(15.36)	78(15.00)
30-39	9(7.63)	11(9.48)	20(8.55)
40-49	9(12.00)	3(4.17)	12(8.16)
50-59	3(7.89)	1(8.22)	4(8.00)
60-65	0(0.00)	0(0.00)	0(0.00)
Total	54(11.71)	63(12.50)	117(12.12)

Note: Percentages are calculated by taking the number of male (female, or total) respondents who are actively looking for jobs divided by the number of male (female, or total) respondents within the same age range.

Table 4. Dependent and Independent Variables

Variable	Description of Variable	Description of Levels
CONSIDER	Consider a change in employment (dependent variable)	1 = yes 0 = no
LOOK	Actively look for another job (dependent variable)	1 = yes; 0 = no
Age	Age of respondent	Continuous variable
Sex	Sex of respondent	1 = male; 0 = female
EduPri	Highest educational level attained	1 = primary; 0 = otherwise*
EduOA	Highest educational level attained	1 = O, A level; 0 = otherwise
EduDip	Highest educational level attained	1 = diploma; 0 = otherwise
DEP	Number of dependants	1 = three or more dependants 0 = otherwise
SoleB	Sole breadwinner of the family	1 = yes, 0 = no
Sector	Working sector	1 = Public; 0 = Private
NJobs	Number of jobs held	Discrete variable
Income	Monthly income level	1 to 6, lowest to highest
JobSat	Overall job satisfaction level	1 to 5, least to most satisfied
INC	Satisfaction with salary and bonuses	1 to 5, least to most satisfied
BEN	Satisfaction with fringe benefits	1 to 5, least to most satisfied
ENV	Satisfaction with working environment	1 to 5, least to most satisfied
FAIR	Satisfaction with fairness in treatment	1 to 5, least to most satisfied
INTER	Satisfaction with interest in job scope	1 to 5, least to most satisfied
JPROS	Satisfaction with promotional prospects	1 to 5, least to most satisfied
JSEC	Satisfaction with job security	1 to 5, least to most satisfied
Ideal	Is current employment ideal occupation	1 = yes, 0 = no
Size	Size of respondent's organization	1 to 6, smallest to largest

*Lowest education level in the survey is primary school education.

Table 5. Logistic Regression Analysis of CONSIDER Variable

Variable	Logit		Probit		Cloglog	
	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
Age	-0.0597***	0.0131	-0.0356***	0.0075	-0.0443***	0.0092
Sex	0.6506***	0.1852	0.3940***	0.1070	0.4195***	0.1236
EduPri	0.5814	0.5526	0.3940	0.3173	0.5501	0.3739
EduOA	0.1576	0.2308	0.1065	0.1339	0.0694	0.1544
EduDip	0.1847	0.2359	0.1017	0.1371	0.0459	0.1593
DEP	-0.3825	0.3133	-0.2052	0.1778	-0.2397	0.2258
SoleB	0.1249	0.2374	0.0637	0.1367	0.0660	0.1625
Sector	0.1084	0.2018	0.0547	0.1171	0.1220	0.1386
NJobs	0.0449	0.0571	0.0271	0.0328	0.0441	0.0383
IncomeSq	0.0205	0.0131	0.0125	0.0075	0.0163	0.0092
JobSat	-0.3657*	0.1503	-0.2083*	0.0866	-0.2783**	0.1011
INC	-0.1946	0.1261	-0.1154	0.0733	-0.1720*	0.0848
BEN	-0.4517***	0.1184	-0.2565***	0.0684	-0.2746***	0.0779
ENV	-0.2661	0.1408	-0.1555*	0.0810	-0.2274*	0.0910
FAIR	-0.1074	0.1371	-0.0693	0.0791	-0.0633	0.0888
JSEC	-0.3480**	0.1100	-0.1951**	0.0631	-0.1836**	0.0718
Ideal	-1.6071***	0.1743	-0.9484***	0.1012	-1.1228***	0.1281
Size	-0.9110*	0.3698	-0.4810*	0.2136	-0.3595	0.2485
SizeSq	0.1151**	0.0413	0.0615**	0.0238	0.0486*	0.0277
R^2	0.4592		0.4585		0.4525	
Lackfit	3.6800 (.8848)		4.7863 (.7802)		7.8822 (.4451)	
Max Log Likelihood	-454.05		-454.47		-457.72	
Number of observations	965		965		965	

The R^2 is defined by Nagelkerke (1991). Lackfit is the Hosmer and Lemeshow χ^2 goodness-of-fit test with eight degrees of freedom, p -values are in parenthesis. Significance is indicated by one asterisk (5-percent level), two asterisks (1-percent level), or three asterisks (0.1-percent level).

Table 6. Logistic Regression Analysis of LOOK Variable

Variable	Logit		Probit		Cloglog	
	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
Age	-0.0485**	0.0186	-0.0255**	0.00989	-0.0498**	0.0154
Sex	0.1532	0.2558	0.0915	0.13820	0.0785	0.2150
EduPri	0.9047	0.7431	0.4384	0.40300	1.0105	0.6000
EduOA	0.3246	0.3230	0.1838	0.17480	0.2595	0.2731
EduDip	-0.0114	0.3483	0.0103	0.18640	-0.0366	0.2985
DEP	-0.8537	0.5366	-0.4315	0.26920	-0.7084	0.4910
SoleB	0.5631	0.3126	0.3359*	0.16930	0.4583	0.2591
Sector	0.6300*	0.2891	0.3457*	0.15490	0.5638*	0.2432
NJobs	0.0846	0.0706	0.0458	0.03910	0.0819	0.0572
IncomeSq	0.0380*	0.0190	0.0225*	0.01010	0.0357*	0.0161
JobSat	-0.4040*	0.2058	-0.1885	0.11240	-0.3944*	0.1677
INC	-0.2339	0.1662	-0.1501	0.09040	-0.1768	0.1405
ENV	-0.5309***	0.1622	-0.2975***	0.08880	-0.4167**	0.1324
INTER	-0.2273	0.1483	-0.1420	0.08210	-0.1809	0.1196
JPROS	-0.0390	0.1485	-0.0290	0.08110	-0.0347	0.1218
JSEC	-0.5712***	0.1364	-0.3172***	0.07560	-0.4571***	0.1087
Ideal	-0.7640**	0.2806	-0.4260**	0.14700	-0.6350**	0.2466
Size	-1.3357**	0.4876	-0.7741**	0.26580	-1.0877**	0.4114
SizeSq	0.1376**	0.0550	0.0802**	0.02990	0.1134**	0.0465
R^2	0.3496		0.3550		0.3453	
Lackfit	5.3188	(.7230)	6.1169	(.6341)	7.0162	(.5349)
Max Log Likelihood	-259.18		-257.51		-260.49	
Number of observations	965		965		965	

The R^2 is defined by Nagelkerke (1991). Lackfit is the Hosmer and Lemeshow χ^2 goodness-of-fit test with eight degrees of freedom, p -values are in parenthesis. Significance is indicated by one asterisk (5-percent level), two asterisks (1-percent level), or three asterisks (0.1-percent level).

Table 7. Point and Interval Estimate for Odds Ratio under Logit Link

CONSIDER				LOOK			
Effect	Point Estimate	95% Wald* Confidence Limits		Effect	Point Estimate	95% Wald* Confidence Limits	
Age	0.942	0.918	0.966	Age	0.953	0.918	0.988
Sex	1.917	1.333	2.756	Sex	1.166	0.706	1.924
EduPri	1.789	0.606	5.283	EduPri	2.471	0.576	10.602
EduOA	1.171	0.745	1.840	EduOA	1.383	0.735	2.606
EduDip	1.203	0.758	1.910	EduDip	0.989	0.500	1.957
DEP	0.682	0.369	1.261	DED	0.426	0.149	1.219
SoleB	1.133	0.711	1.804	SoleB	1.756	0.952	3.241
Sector	1.115	0.750	1.655	Sector	1.878	1.065	3.309
NJobs	1.046	0.935	1.170	NJobs	1.088	0.948	1.250
IncomeSq	1.021	0.995	1.047	IncomeSq	1.039	1.001	1.078
JobSat	0.694	0.517	0.931	JobSat	0.668	0.446	0.999
INC	0.823	0.643	1.054	INC	0.791	0.571	1.096
BEN	0.637	0.505	0.803	ENV	0.588	0.428	0.808
ENV	0.766	0.582	1.010	INTER	0.797	0.596	1.065
FAIR	0.898	0.687	1.175	JPROS	0.962	0.719	1.287
JSEC	0.706	0.569	0.876	JSEC	0.565	0.432	0.738
Ideal	0.200	0.142	0.282	Ideal	0.466	0.269	0.807
Size	0.402	0.195	0.830	Size	0.263	0.101	0.684
SizeSq	1.122	1.035	1.217	SizeSq	1.148	1.030	1.278

* If the 95% confidence interval for odds-ratio contains the value 1 for a given explanatory variable, then the corresponding coefficient is not significantly different from zero at 5% level of significance.

Table 8. Reasons Contributing towards Decision on Changing Employment

Salary below expectations	Poor working environment	Too long working hours	Excessive working pressure	Company financially unsound	Traspor-tation problems
60.68%	39.32%	31.62%	30.77%	14.53%	9.40%

Table 9. Reasons Contributing towards Decision on Remaining in Current Employment

Poor economic outlook	Contentment	Difficulty getting better job	Lack qualification/ skills	No enough funds	Too risk
46.82%	45.05%	32.90%	18.63%	17.10%	12.26%