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Forthcoming in *Review of Public Personnel Administration*



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Abstract

This paper proposes and tests a detailed model of turnover intention on a large sample of State of Texas employees. The paper focuses attention on three particular theoretical issues. First, the results offer support for a life-cycle stability hypothesis, which suggests that age, experience, and geographic living preferences foster a reluctance to change jobs, a reluctance which is compounded by economic/familial constraints for primary wage earners and members of large households. Second, the results show that females are significantly less likely to state an intention to quit, a finding running counter to previous research. We argue that this finding reflects changing patterns of female labor force participation, and the particular advantages that the public sector offers to female employees. Third, the results allow us to distinguish between the relative contributions of three potentially overlapping concepts: organizational loyalty, voice and empowerment, and find that while organizational loyalty and empowerment reduce intent to quit, voice is not a significant predictor of turnover intention. In addition to these findings, the paper provides a detailed test of different human resource management policies, and provides particular support for diversity policies.

INTRODUCTION

Why do public employees decide to leave their organization? This is basic question for human resource managers and organization theorists. Organizations employ expensive human resource management (HRM) strategies in the hope of not only recruiting staff, but in keeping them. The underlying bias of turnover research is that voluntary turnover is a negative outcome for an organization. Human capital that the organization wants to retain leaves, and process separation costs, recruitment costs, training costs and lost productivity costs are incurred. Research has sought to understand why employees leave in the hopes of providing employers with an informed understanding of the strategies they can use to limit turnover.

This paper has two particular goals. First, we identify and test a detailed model of turnover based on previous research. While there is an extensive empirical literature on turnover in the private sector, there is surprisingly little in the public sector. Some older exceptions (Kellough & Osuna, 1995; Huang, Chuang, & Lin 2003; Ito 2003; Lewis, 1991; Lewis & Park, 1989; Mor Barak, Nissl & Levin, 2001; Selden & Moynihan 2000) have been joined by recent work (Bertelli 2007; Kim 2005; Lee & Whitford, forthcoming; Meier & Hicklin, forthcoming; Moynihan & Pandey, forthcoming), but such research rarely focuses on state government (Smith, 1979). This paper seeks to provide better empirical understanding of the causes of turnover in the public sector by testing some frequently hypothesized predictors on a large sample of employees from the State of Texas.

The second goal of the paper is to advance turnover theory in three particular ways. We propose what we call the life-cycle stability hypothesis, which suggests individuals who are older and have considerable experience with an organization will be reluctant to change jobs, a reluctance compounded by economic/familial constraints for primary wage earners and members

of large households. The paper also proposes that the traditional hypotheses that females are more likely to plan to quit are not only wrong, but that the reverse is true because of changing patterns of gender labor force participation, and the particular advantages that the public sector can offer to female employees. We also seek to advance the understanding of turnover by distinguishing between the relative contributions of three sometimes overlapping concepts: organizational loyalty, voice and empowerment.

LITERATURE REVIEW

The factors associated with turnover generally fall within three broad categories: environmental or economic, individual and organizational (Mobley et al., 1979; Selden & Moynihan, 2000). This paper employs a cross-sectional model for a fixed point in time in a specific state that allows us to examine individual characteristics and individual perceptions of work characteristics while controlling for agency factors, but we do not control for geographical variation or variation across time for economic factors such as unemployment.

This section develops a detailed list of individual and job-related hypotheses of turnover. Our approach derives from the assumption of March and Simon (1958) that employees choose to stay or leave depending on the factors that influence the desirability and ease of movement. The empirical literature that has followed this broad proposal has produced a long list of claims as to why an employee decides to leave or stay.

Individual Characteristics

Standard individual characteristics associated with turnover include controls for gender and minority status, familial constraints on job movement such as primary household earner and

household size, age, length of time in position and length of time living in a state, and the greater job opportunities provided by higher levels of education.

The Life-Cycle Stability Hypothesis. Individual characteristics are typically considered separately, as controls for other variables and without consideration of the conceptual relationship with one another. However, some individual characteristics (age, tenure, familial commitments, geographic preferences) commonly indicate that an employee is at a point in their life where they have a strong preference for the status quo, including their job. Collectively, we characterize this as a life-cycle stability hypothesis: older and more settled employees with familial obligations are less likely to quit.

Previous research suggests that older employees and longer serving employees are less likely to quit (Cotton and Tuttle, 1986; Iverson and Curri van, 2003; Kellough and Osuna, 1995; Lazear, 1999; Lewis & Park, 1989; Lewis 1991; Mor Barak et al., 2001; Muchinsky & Morrow, 1980). We therefore include a variable that measures age, and as well as a measure of length of time employees have worked for the state. In many studies of turnover, age is often used without controlling for length of service. While the two are connected, they point to different theoretical explanations for turnover intentions, and for this reason it is important to incorporate measures of both age and tenure. Another indicator of a preference for stability is the length of time an employee has lived in the state. We hypothesize that the longer that an employee remains within a job or a particular geographical area, the more likely it is that they have committed to that job or area and the less likely it is that they will quit.

Labor economics offers an additional theoretical explanation for why employees with greater service continue in a job. Becker (1962) proposed that workers and firms invest jointly in firm-

specific human capital. Both enjoy benefits of this relationship, making it relatively costly to end the relationship. The longer an employee is with a company, the greater the mutual investments and benefits, and the greater the disincentives to quit. In the initial years of employment, as employees seek to ascertain whether their job meets their preferences, the limited firm-specific knowledge they have developed makes it relatively easy for them to switch to another firm. This human capital perspective therefore provides additional explanation for the reason why time on the job (or its frequent correlate, age) is generally found to be a strong and negative predictor of turnover. Another reason why employees with a good deal of service may be reluctant to quit is because governments often structure significant pension penalties (Ippolito 1987).

Other individual characteristics show how economic imperatives and familial constraints reinforce the desire for the status-quo. Individuals who are a household's primary earner are less likely to exit a stable job and face the risks associated with seeking a new job. For the same reasons, we expect that employees from larger households will be less likely to leave the workplace (Blau & Kahn, 1981), although Mor Barak et al. (2001) suggest evidence to the contrary.

Among the individual-level variables, the role of education has been widely tested. A consistent finding is that more educated employees are more likely to exit (Cotton & Tuttle, 1986), although Curry, McCarragher, and Dellmann-Jenkins (2005), found the opposite result among social service employees. The basic logic for these findings is that education provides an externally legitimated measure of human capital that is accepted in other organizations, and therefore increases the ease of movement of the employee.

Changing Perspectives on Gender and Race. Gender and minority status have been included as a standard controls included in most studies of turnover. The traditional hypothesis was that both females and members of minority groups were more likely to quit. But this traditional hypothesis came under challenge, particularly with regard to gender. The most careful investigation of the relationship between gender and race, and turnover found that factors such as age, education, promotion opportunity, experience and salary mediated the effect of gender (Blau & Kahn, 1981; Lewis & Park, 1989; Kellough & Osuna, 1995; Smith, 1979).

With regard to race, recent studies at the federal level show no relationship between minority status and turnover intention (Bertelli 2007; Lee & Whitford forthcoming), although such research follows the practice of most turnover scholarship by organizing racial categories broadly into whites and minorities. Since 44% of our sample of Texas state employees fall into categories traditionally defined as minority, we divided this group further into four separate dummy variables: African-American/Black, Hispanic/Mexican-American, Asian-American/Pacific Islander/Native American Indian, and Multiracial/other.

For gender, the traditional hypothesis has been largely set aside and treatments of gender and contemporary research often now assumes no relationship with turnover. However, we argue that both the traditional hypothesis and the contemporary failure to consider gender overlook a number of reasons why females in the public sector may be less likely to consider quitting than their male counterparts. Changing patterns of workforce participation, and the particular attraction of the public sector, provides the basis for proposing a negative relationship between females and turnover intention.

The traditional hypothesis may have been more accurate once, but fails to reflect changing patterns of labor participation. The hypothesis that women were more likely to leave are

primarily based on outdated assumptions of a traditional family structure with a single breadwinner. Women have increased their participation in the labor force (from 43% in 1970 to 59% in 2004), increased their earnings as a percentage of men (from 62% in 1970 to 80% in 2004), and are more likely to participate when they have a child under 18 (47% in 1975 to 71% in 2004), and contributed a larger share of household earnings (26% in 1973 to 35% in 2003) (Bureau of Labor Statistics, 2005). Women are less likely to exit the workforce due to familial commitments (Stier & Lewin-Epstein, 2001, p.1731). This pattern holds true across cross-national studies, in large part because of policies supportive of working mothers (Stier & Lewin-Epstein, 2001), especially family leave policies (Waldfogel, Higuchi & Abe, 1999). We find some support for the suggestion that the traditional hypothesis is simply outdated by the fact that more recent research rarely finds an impact of gender on turnover even when failing to include many of the gender-relevant controls whose absence was used to critique older studies (e.g., Huang et al., 2003; Iverson & Currivan, 2003; Kim 2005). Changing patterns of labor force participation have made it less likely that women will quit.

The relationship between gender and turnover may also be distinct for public sector employment, which we propose will be more attractive to women. Most of the literature on gender and turnover comes from the private sector. Women have traditionally been more likely to work in the public sector, a trend which has increased of late (Bernhardt & Dresser, 2002, p.4). At the federal level, the percentage of women in the Senior Executive Service increased from 5.1% in 1979 to 26.7% in 2004 (Stivers, 2002, p.27; U.S. Office of Personnel Management 2004, p.72), and women made up 45% of the civilian workforce in 2003, up from 41% in 1985 (U.S. Office of Personnel Management 1997, p.10; U.S. Office of Personnel Management 2004, p.10). Among military personnel, patterns of participation have also been increasing, albeit from

a much lower base. In 1990 women made up 10.9% of enlisted personnel, and 11.5% of officers. By 2003, they made up 15.0% of enlisted personnel and 15.3% of officers (U.S. Department of Defense 2003). Women are less likely to encounter a glass ceiling in the public sector, with Stivers (2002) reporting that there are about twice as many senior managers who are females in the federal government than there are in the private sector. At the state and local level, we also find progress. In 2001 women made up 45.3% of state and local employees (not including employees in school systems), up from 41.0% in 1980. Between 1987 and 2001, women increased their share of official and administrative positions in state and local government from 29.1% to 36.9%, and share of professional jobs from 48.1% to 55.6% (Stivers, 2002; U.S. Census 2007).

The substantial progress in gender representation achieved in the public sector suggests that it might provide attractive setting for females. There is empirical evidence to support the claim that differences in public-private employment conditions lead women to prefer working in the public sector. Most pertinent for this paper is recent work by Llorens, Wenger & Kellough (forthcoming). They cite data that shows that in 2003, women held 50.7% of all state government positions, relative to 46.5% of positions in the private sector. They also demonstrate that the ratio of female participation in state government to female participation in the state civilian labor force is positive in all states, with a U.S. average of 1.19.

Why would women prefer the public sector? A primary reason is because women face a lower wage penalty than they would in the private sector. The existence of such wage penalties is significantly associated with the overrepresentation of women in state governments (Llorens, Wenger & Kellough forthcoming). Cross-national studies that include the US, Canada and European countries provide additional evidence that women disproportionately choose to join the

public sector, and in doing so they tend to earn more than in the private sector, and also have a greater potential to close the earning gap with male colleagues (Gornick & Jacobs, 1998). Bernhardt and Dresser (2002, p.1) also argue that women will be more attracted to the public sector because they of the stability and due process protections provided by stronger unions, and better benefits (see also Kolberg, 1991). In the public sector, women have greater potential to find balance between work and family life, with classification systems that offer a predictable career path and less potential for discrimination. Women are also more likely to enjoy better leave policies than in the private sector, if for no other reason than the fact that public employers are subject to the requirements of the Family and Medical Leave Act, whereas only private employers with more than 50 people are subject to these provisions. Beyond the ability to access more attractive employment policies, women may be more attracted to stay in the public sector because of a desire to serve the public interest. Women are more likely than men to express high levels of public service motivation (Dehart-Davis, Marolowe, & Pandey, 2006; Naff & Crum, 1991).

In fact, previous public sector studies provide no empirical evidence for the belief that women in the public sector are significantly more likely to depart (Huang et al., 2003; Lewis & Park, 1989; Kim, 2005; Kellough & Osuna 1995; Mor Barak et al. 2001; Smith 1979). Some recent work has found women significantly less likely to quit public sector jobs in social services (Curry et al., 2005) and federal positions (Bertelli, 2007; Lee & Whitford, forthcoming), although the implications of these findings were not explored.

For the above reasons, we propose that females are less likely to express an intention to quit than males.

Organizational Factors

Organizational factors can be divided into three categories (Kim, 2005) – job characteristics, HRM practices and work environment – although it should be acknowledged that many variables placed into one of these categories overlap with others. Job characteristics include workload, job satisfaction and supervisory status. HRM practices include pay, promotion, benefits, efforts to foster diversity and family-friendly job attributes. Aspects of the work environment include empowerment, voice and loyalty.

Job Characteristics. Employees with favorable job characteristics are expected to be more satisfied, and less likely to leave (Mor Barak et al., 2001; Cotton & Tuttle, 1986; Iverson & Currihan, 2003; Mobley, 1977; Munn, Barber, & Fritz, 1996). We measure job satisfaction in the context of whether employees feel that their expectations have been met, an approach inspired by Porter and Steer's (1973) argument on the role of met expectations and turnover (see also Cotton & Tuttle, 1986; Michaels & Spector, 1982). This reflects the understanding that the job satisfaction variable represents in a single indicator a range of job characteristics factors, such as role clarity, goal congruency with employers, recognition of work, relationships with supervisors (Wright & Davis, 2002). Job characteristics that lead to employee burnout are expected to increase intention to leave (Huang et al., 2003; Kim, 2005). We therefore test the effects of workload, assuming that employees who perceive that they are asked to maintain and unreasonable workload will be more likely to consider leaving.

Evidence on the relationship between occupational level and turnover is mixed. The limited public sector literature suggests that higher level employees are less likely to quit, but the more extensive private literature suggests the opposite, perhaps because of greater opportunities to

move. Kellough and Osuna (1995) find that federal agencies with more clerical employees have higher quit rates, and Lewis (1991) finds more senior federal employees less likely to leave. However, once the related effects of age and length of experience are taken into account, individuals at higher levels may be more likely to leave because of access to alternative positions, and therefore are more likely to quit (Cotton & Tuttle, 1986).

Human Resource Management Policies. A number of authors have made the case that HRM policies can and should be designed to reduce turnover (Arthur, 1994; Gould Williams, 2004; Osterman, 1997; Mobley, 1977; Selden & Moynihan, 2000; Shaw, Delery, Jenkins, & Gupta, 1998). There are a number of specific policies that have been hypothesized to reduce turnover. We test the role of promotion, pay, benefits, family-friendly policies, employee development, and employee diversity policies.

Employees who have received a merit promotion are expected to be less likely to leave. This is consistent with research on the effects of promotions on individuals (Lazear, 1999; Lee & Whitford, forthcoming), and findings that organizations with greater room for promotion tend to enjoy lower turnover (Kellough & Osuna, 1995; Selden & Moynihan 2000; Smith, 1979). Another straightforward hypothesis is that individuals who enjoy better compensation are less likely to quit (Blau & Kahn, 1981; Cotton & Tuttle, 1986; Kim, 1999; Lazear, 1996; Leonard, 1987; Park, Ofori-Dankwa & Bishop, 1994; Shaw et al. 1998). Public sector research supports this hypothesis based on comparisons of state pay differentials (Selden & Moynihan, 2000), perception of pay satisfactoriness (Lee & Whitford, forthcoming) and actual measures of salary (Lewis & Park, 1989). A related hypothesis is that employees who perceive that they enjoy relatively generous benefits are less likely to leave (Shaw et al., 1998). There is some

preliminary empirical support that these hypotheses should be true for this sample: a survey of voluntary separations from Texas state government found that 24% cited a desire for better pay or benefits as a primary reason for their exit (SAO 2007).

HRM policies that facilitate employee development are expected to reduce turnover, but this hypothesis has a mixed record in terms of empirical support. For instance, Curry et al. (2005) find that meeting employee development needs encourages retention, but others do not (Kim, 2005; Shaw et al., 1998). Indeed, Ito (2003) argues that the reverse outcome is likely, and offer evidence that investments in staff training increases employee marketability, and makes it more likely that they will leave.

HRM policies that make it easier for employees to balance work and family-commitments have been hypothesized to reduce turnover rates (Durst, 1999; Ezra & Deckman, 1996; Newman & Mathews, 1999). At the state level, there is evidence that the existence of family-friendly child care policies helps to explain variation in turnover rates (Selden & Moynihan, 2000). HRM policies that aim to increase diversity in the work environment may also reduce turnover. Wise & Tschirhart (2000) identify a number of empirical studies that show a negative relationship between diversity and both intent to leave and actual turnover.

Work Environment: Loyalty, Empowerment and Exit. The work environment reflects how organizational rules and culture interact with individual employee perspectives. Three concepts that have been hypothesized to reduce turnover are loyalty, voice and empowerment.

A widely tested and supported hypothesis is that the sense of attachment an individual feels toward job or fellow employees reduces turnover intent. This hypothesis has been tested using a variety of measures, but usually conceptualized as organizational commitment (see Cohen, 1993,

for a meta analysis of this research, also Arthur, 1994; Mor Barak et al., 2001; Hochwarter, Perrewé, Ferris, & Guercio, 1999; Ito, 2003; Michaels & Spector, 1982; Stremmel, 1991). A recent variation on the commitment concept is Lee and Whitford's (forthcoming) elegant application of Hirschman (1970) to argue that the choices of exit, voice and loyalty are interactive influences on turnover, with loyalty reducing the intent to quit.

Another aspect of the work environment is the sense of control that employees have in the workplace. Some turnover research proposes that employees who perceive greater control are less likely to leave. This general proposition has found form in two different concepts. The first is Hirschman's (1970) voice concept. Voice options have been found to reduce turnover (Iverson & Currivan 2003; Lee & Whitford forthcoming). The second concept that ties individual control to turnover is the concept of empowerment, in the form of participation (Kim 2005) or autonomy. Private sector research provides evidence that employees who perceive greater autonomy are less likely to quit (Muchinsky & Morrow, 1980). Among public sector studies, a study of teacher turnover found that inability to provide input into decision-making contributed to turnover (Ingersoll, 2001), and a study of social work employees found job autonomy negatively related to turnover (Lee & Ashworth, 1993). We test the effects of both voice and empowerment separately.

DATA AND METHOD

Our data come from a survey of state employees in the State of Texas. In 2007, 15,769 of the state's 145,721 employees voluntarily separated from their agencies (not including retirements), providing a voluntary turnover rate of 10.8%, and suggesting that voluntary turnover is a significant enough problem in the state to merit empirical investigation (SAO 2007).ⁱ The data

were obtained from a 2004 survey of Texas state agencies (listed in Appendix 1), the Survey of Organizational Excellence. The survey was administered by the Organizational Excellence Group at the University of Texas at Austin. While the Office of Personnel Management and the Merit Systems Protection Board regularly conduct large-scale surveys of federal personnel, there is not to our knowledge similar scale effort to survey state government employees. A total of 62,628 employees were surveyed in 53 different state agencies, resulting in 34,668 usable responses, a response rate of over 55 percent. This confidential survey was administered primarily via email from which the respondent was provided an internet link to an online survey. Data collection was open for up to three weeks and reminder emails were sent to potential respondents. Employees without easy access to the internet were identified in advance and given a paper version of the survey. Most organizations used a census strategy in which all full-time benefit eligible employees were invited to participate. However, two organizations used a 20 percent random sample of all employees.

The survey is designed to capture common organizational and employment concepts. The measurement of all of our variables, Cronbach's alpha scores for indexes and descriptive statistics are found in Appendix 2. The measurement of most of the variables is relatively straightforward and requires little comment. One measurement issue that is of note, however, is clarifying the relative contribution of between voice and empowerment. These concepts are sometimes used interchangeably, and measured in different ways, muddying our understanding of causal relationships. We therefore test each concept, employing measures we consider to have strong validity. Iverson & Currivan (2003) measure voice as participation in union activities, while Lee & Whitford (forthcoming) consider voice in terms of the sense of empowerment employees enjoy, and control over their work processes. Kim's (2005) operationalization of

participation is similar to Lee and Whitford's treatment of voice, in that both reflect employee input on decisions. We test the voice variable with an index of responses to the following statements: "The work atmosphere encourages honest and open communication"; "My ideas and opinions count at work"; and "People who challenge the status quo are valued." This index conceptualizes voice as the degree to which members feel that they can represent their views within the hierarchy, even if those views run counter to the dominant view, and is therefore consistent with Hirschman's (1970, 4) original definition of voice: "The firm's customers or the organization's members express their dissatisfaction directly to management or to some other authority to which management is subordinate or through general protest addressed to anyone who cares to listen: this is the *voice option*" (emphasis in original). We measure empowerment based on the degree to which employees agree that decision making and control are given to employees doing the actual work.

Respondents could choose from a five point Likert-scale response set ranging from "Strongly Agree" to "Strongly Disagree." Respondents could also mark "Don't Know/Not Applicable" or leave the item blank, and these responses were not used in our analysis. Various demographic items were also collected. Our respondents closely mirror state employees (SAO, 2002).ⁱⁱ In order to control for the effect of retirements, we excluded any respondent 60 or over.ⁱⁱⁱ

Because our dependent variable is based on a yes/no response, we used a logistic regression, including a dummy variable for each of the 53 agencies included in the analysis. One advantage of an agency fixed effects approach is that it controls for unobserved agency level differences that we do not otherwise specify in our model. A good example would be how differences in organizational culture shape turnover intention of employees. While a fixed effects approach does not tell us the size or significance of such agency level variables, it does at least ensure that

such factors do not otherwise bias the variables that are tested in the model. None of the agency dummy variables proved to be significant or alter the nature of the relationship between the independent and dependent variables. While the agency controls are not reported in the results section, they were retained in the model.

Measurement of the Dependent Variable

Our dependent variable is a reversed measure of turnover intention, “I plan to be working for this organization in two years.” To ease interpretation, we coded a “no” response, signaling intent to leave the organization, as 1, and yes as zero. Of course, turnover intention is not actually turnover, and this raises the question of using intention as a surrogate for actual quits. There are research advantages to examining intent to quit, rather than actual quits: researchers can employ cross-sectional models, can more easily access to the perceptions of potential quits and relate them to their organizational context, can examine a larger sample of employees, and can identify differences between those who wish to stay in the organization and those intent on leaving. The use of turnover intention is relatively common. For example, a majority of the turnover research examined in the meta-analyses by Wise and Tschirhart (2000) and Mor Barak et al. (2001) used intent to leave rather than actual turnover.

Validity concerns about using turnover intention is reduced by evidence of its strong relationship with actual quits, and evidence that suggests that there is not marked variation between variables that explain intention to quit and actual turnover (Cotton & Tuttle 1986, p.65; Mobley et al. 1979). A survey of five meta analyses of turnover have shown correlations between intent to quit and actual turnover ranging between .31 to .52 (Dalton, Johnson & Daily 1999, p.1342). The relationship between intention to quit and actual quits has been found to vary

considerably across studies, but turnover intention remains the best affective measure of turnover (Vandenburg and Nelson 1999, p.1315).

RESULTS AND DISCUSSION

The results of the analysis are presented in Table 1. As with standard regressions, we provide coefficients and measures of significance. In addition, because we use a logit approach we provide the odds ratio and predicted probabilities (Long & Freese, 2006). The predicted probabilities tell us the probability differences between aspects of the independent variable. The odds ratio is a relative measure of the probability of the dependent variable to occur given the event of the independent variable under study. The higher the score is above one, the more likely it is that employees will state intention to quit, the further the score is below one, the less likely it is that the employee will declare their intent to quit. The difference between the two can be illustrated with the following example. The predicted probability for supervisors is -.01. This means that supervisors are 1 percentage point less likely to state an intention to quit than non-supervisors. The odds ratio for supervisors is .907. This means that supervisors are 9.3 percent less likely than non-supervisors to state an intention to quit.

The results provide varying degrees of support for most of the variable hypothesized to have a relationship with turnover, and largely in directions consistent with previous literature. Most of the standard hypotheses about turnover appear to apply to this particular public setting. To the extent that results run counter to previous research, we consider them in greater detail below. As an aside, it is worth noting that the large sample size helps to move more variables into the realm of statistical significance than would be the case for a smaller sample.

Insert table 1 here

Findings on the Life Cycle Stability. The findings on individuals support the life-cycle stability hypothesis. Employees who have reached a certain measure of stability in their life, and who have pressing economic and familial concerns are less likely to seek the changes brought about by seeking a new job. While much previous work sometimes conflate the effects of age and experience, this paper shows that both have a separate negative effect on turnover intention. Employees who are over the age of 30 are 5.3 percentage points less likely to state an intention to quit than employees under the age of 30. Similarly, employees with six or more years of service are 3.8 percentage points less likely to state an intent to leave than employees with less experience. The finding on length of service is consistent with a human capital view that employees develop firm-specific capabilities that makes it difficult for them to switch firms, but it is also consistent with a general reluctance to pursue change, as suggested by the significant results for the other life-cycle stability variables.

Unlike previous studies, we also incorporate geographical predictors of employment stability. The tendency to have lived in the same area for a considerable period of time also indicates reluctance to change, which tends to limit the search for new employment opportunities and the intention to exit the workplace. It is worth noting that this factor is significant only at .1 levels, and so the finding should remain subject to further questioning. Economic constraints posed by being the primary-wage earners, or part of a larger household also reinforce a preference for the status quo. Our confidence in these findings is increased by the fact that we measure multiple aspects of the life-cycle stability hypothesis (as well as other possible correlates such as

education, pay and supervisory status), and so the results therefore reveal the separate effects of each aspect of each variable.

Findings on Gender and Race. We find that women are significantly less likely to state intent to quit than their male counterparts. Women were 2.7 percentage points less likely than males to state an intention to quit, holding other factors constant. The size of the odds ratio is relatively large. Females were 23% less likely than males to state an intention to quit. The finding is consistent with evidence presented on the changing nature of female participation in the labor force, and the particular attraction of public work to females. This result proved robust to different specifications of the model we employed.^{iv}

One qualification to the finding is that our dependent variable may have limitations in predicting gender effects for actual turnover. This is true if many females who would prefer to stay in their current organization, and imagine themselves doing so, but find themselves forced to drop out of the workforce for unexpected reasons. In our sample, even before the inclusion of controls, women were significantly less likely to state an intention to quit than men. The State of Texas reports little difference between all turnover (including retirements and firing) by gender with the gender breakdown of the workforce, but this does not control for factors that reduce the likelihood that women will quit, and therefore underestimates women's willingness to stay.^v

Another qualification is that our findings may be of limited generalizability if a state government job in Texas is unusually attractive relative to other work opportunities for women. Some evidence for this qualification comes from Llorens, Wenger and Kellough (forthcoming), who report that, along with Oklahoma, Texas is the state with the highest overrepresentation of women relative to their participation in the state labor force. However, they also note that

women are overrepresented in all state governments, suggesting that while Texas is something of an outlier, the basic relationship between gender and attractiveness of public service holds in other states.

The results on race and turnover intention were mixed. Both the African-American/Black category and the multiracial/other category are positively and significantly related to turnover intention. But the other minority categories, Hispanic/Mexican-American and Asian/Pacific-Islander/Native American, are not. One clear caution to our findings is the disproportionate size of the Hispanic category, which includes one quarter of the sample. While members of this category are technically a minority, they represent a large enough group that they may not face the perceived disadvantages of minority status in the workplace. Given the increasing trend towards greater diversity in the workplace, and the growing representation of Hispanics in particular, the results suggest that grouping minorities into one single category may miss distinct patterns within across groups, although it is beyond the scope of this paper to explain such differences.

Findings on Job Characteristics. The findings on job-related factors confirm the powerful role that previous research has detailed for job satisfaction, even as we measure job satisfaction in terms of met expectations, rather than a more direct indicator of satisfaction typically found in previous research. Job satisfaction, along with education, has the largest probability effect of any of the variables tested. A one unit increase in our job satisfaction scale was associated with a five percentage point reduction in the probability than an individual would state an intention to quit. The results for workload suggest that greater workload is negatively associated with turnover, but the result is slightly above standard levels of statistical significance.

Findings on HRM Practices. As predicted, we find that perceptions of fair pay were negatively and significantly related to turnover. This is consistent with other findings, including those from the federal level (Lee & Whitford, forthcoming). However, actual salary is positively related to turnover. The probability that employees earning more than \$45,000 per year will state an intention to quit is 2.8 percentage points higher than employees earning less than that amount. This finding is at odds with previous evidence on the affect of salaries at the federal level (Lewis & Park, 1989), but are robust to dropping correlates of pay from the model that might confound the relationship, such as age, education and supervisory status, or if we used a categorical measure of pay rather than a dummy variable.

So what explains this seemingly counterintuitive result? If we accept the claims that public-private pay disparities are greatest among more senior staff, and that public employees are not likely to measure pay satisfaction with others in the organization (since classification controls limit variation among work peers), but with their perceived sense of fair pay relative to opportunities outside the organization, this raises a possible explanation. Actual salary may indicate the seniority that the employee has reached. The higher the salary therefore, the more likely the employee perceives a gap in salary relative to private sector counterparts, the greater the sense that pay is not adequate, and the greater the likelihood of turnover.

Another possible explanation is suggested by the findings on education, which, consistent with previous research, shows a positive relationship with turnover intention. Employees with a college degree or higher were 5 percentage points more likely to state an intention to leave than those with lower educational attainment. The logic behind the role of education— that employees with greater human capital have a greater ability to win alternative employment – may also apply

to those who are paid better. Salary might be considered as an indicator of the skill set or capacity of employees in the workplace, beyond educational attainment and supervisory status (which is also controlled for, and negatively related to turnover intention), and these skills may provide the employee with greater ability to switch to another job. This interpretation is somewhat at odds with a human capital view, since it suggests that organizations reward non-firm specific skills that employees can use to find other jobs. In many instances organizations may be forced to do so precisely because the potential threat of exit pushes them to provide greater rewards to employees whose skills are more marketable.

The receipt of a merit promotion in the last two years had a powerful impact on turnover intention. Those who had received a promotion were 4 percentage points less likely to state an intention to quit than those who had not received a promotion. This suggests the importance of individual recognition and concrete career improvement provided by promotions, and is consistent with findings both from the private sector (Lazear, 1999) and the federal level (Lee & Whitford, forthcoming). The existence of family-friendly policies was negatively associated with turnover, but only at marginal levels of statistical significance.^{vi} HRM efforts to foster employee development through the provision of training and information about job opportunities was not significantly related to reducing turnover intention. One reason for this may be that employee development has two conflicting effects that cancel each other out. On the one hand, such investment may signal that the organization values an employee, which in turn fosters a greater sense of employee loyalty to the organization (Curry et al., 2005). On the other hand, providing greater training to the employee may make them more skilled and capable of winning a job in other organizations (Ito, 2003). A research challenge that suggests itself is the need for a measurement strategy that can sort out the relative influence of these conflicting effects.

Our findings on diversity are more encouraging for HRM managers. To the extent that employees feel that they are in a work environment where there is a deliberate effort to foster diversity, they are less likely to consider leaving. Employees who were 1 point higher on the five point diversity practices scale were 1.5 percentage points less likely to state an intention to quit. Lee and Whitford (forthcoming) also find such a relationship at the federal level, but only for the most senior managers.^{vii} The findings offer empirical support for the claims of Wise and Tschirhart (2000) on the benefits of diversity for public organizations.

Findings on Loyalty, Empowerment and Voice: Our analysis of work environment factors focused on clarifying the relative contributions of loyalty, the provision of employee autonomy over work processes and decisions, and the abilities of employees to use voice to critique the organization. We find that our measure of loyalty is a significant negative predictor of turnover intention. Every one unit increase on the 3-15 point scale for loyalty is associated with a 1.2 percentage point reduction in the probability of stating an intention to quit. This is consistent with previous evidence on the related concept of commitment, and with Lee and Whitford's (forthcoming) findings, even though we employ a different measure of the concept.

From a research perspective our measurement approach offers a way of distinguishing between empowerment and voice. While both are negatively associated with turnover intention, only the empowerment variable falls an acceptable range of statistical significance, and even this variable is just significant at the .05 level. Every one unit increase on the empowerment scale leads to .4 percentage point reduction in the likelihood of stating an intention to quit. This supports previous findings. However, the voice variable proved not to be significant, in contrast to other research (Iverson & Curri van, 1993; Lee & Whitford, forthcoming). From a practical

perspective, the results from our sample suggest that organizations seeking to reduce turnover by shaping the work environment will have the greatest impact if they focus on fostering organizational loyalty rather than empowerment or voice mechanisms.

CONCLUSION

This paper identified a model of employee turnover based on previous research, and tested this model on a large sample of state employees. Our focus was on individual and organizational factors, and the results provide information on whether well-established claims about turnover apply to this population. One important caveat is that our cross-sectional test of a single state limits our ability to include other variables that have been previously found to affect turnover, such as local economic conditions, or union presence. Another caveat is that we examined only a single state, and so generalizations to other governments should be made with caution. However, most of the variables found predictable results, and therefore do not suggest that the factors that cause turnover in Texas are dramatically different from the factors that cause turnover elsewhere.

One area where our results differ from much of previous research is in the relationship between gender and turnover. Our most interesting finding is that females are less likely to plan to quit, contradicting previous research that suggested females were more likely to quit, or (more convincingly) that gender did not matter to turnover once relevant controls were accounted for. As with any finding that challenges previous research, we present our results cautiously and urge replication in other settings. However, this paper presented logical reasons to expect such a result, tied to changing levels of female workforce participation, and the attractive features that public employment offers to females. At the very least, researchers investigating the role of

gender in public sector turnover in the future should be more willing to entertain the hypothesis that females are more likely to desire to stay rather than to leave.

Our findings on individual factors provide support for the lifecycle stability hypothesis. Rather than consider age, experience, geographical stability as unrelated control variables, they should be conceptualized as closely connected indicators of why some employees have reached a point in their life where they want to maintain lifestyle status quo rather than embrace change. Economic and familial constraints also enforce a measure of lifestyle stability inconsistent with turnover. Such employees should be recognized among HR managers as having a tangible value in terms of their likelihood to stay with the organization.

From a HRM perspective, the results are somewhat sobering. HR managers have the least control over the factors that seem to matter the most in predicting turnover. Individual factors are clearly important (as are economic variables not tested here) but there is nothing HRM managers can do to control these. Of the organizational factors that matter a great deal – job satisfaction, merit promotions and to a lesser extent, pay and loyalty– these are the factors that HRM managers have least control over. They are determined by the qualities and capacity of the individual, by externally imposed pay constraints, relationships with supervisors, organizational culture, and only partly by HRM policies. The factors that HRM managers have most direct control over – employee development through training and provision of information and creating flexible work environments – are not critical factors in reducing turnover when these other variables are accounted for. The one exception to this finding is the area of diversity, where HRM policies can have a positive impact on ensuring a diverse workforce, which in turn reduces turnover.

Table 1: Logistic Regression on Intent to Leave

Variable (hypothesized relationship)	Coefficient	Odds ratio	Predicted probabilities
<i>Individual</i>			
Primary earner (-)	-.189***	.828	-.020
Household size (-)	-.149***	.861	-.016
Age (-)	-.512***	.599	-.053
Years in state of Texas (-)	-.103+	.902	-.011
Agency experience (-)	-.366***	.693	-.038
Education (+)	.484***	1.623	.050
Female (-)	-.261	.770	-.027
African-American/Black	.182**	1.200	.019
Hispanic/Mexican-American	.063	1.065	.007
Asian-American/Pacific Islander/Native American	-.233	.792	-.024
Multiracial/other	.269*	1.308	.028
<i>Job-characteristics</i>			
Job-satisfaction (-)	-.480***	.619	-.050
Workload (+)	.029	1.030	.003
Supervisor (-)	-.971+	.907	-.010
<i>HRM Practices</i>			
Salary (-)	.269***	1.308	.028
Perception of fair pay (-)	-.081***	.922	-.008
Benefits (-)	.023	1.024	.002
Merit promotion (-)	-.383***	.682	-.040
Family-friendly work practices (-)	-.033+	.967	-.004
Diverse workforce practices (-)	-.140***	.869	-.015
Employee development (-)	-.009	.991	-.001
<i>Work Environment</i>			
Commitment/loyalty (-)	-.115***	.891	-.012
Empowerment (-)	-.042*	1.042	.004
Voice (-)	-.002	1.002	.000
Agency specific effects included; N = 24074; Log-likelihood = -8913.97; Wald = ; Nagelkerke R Square = .223 ; McFaddens Adjusted R square .0152; Percent correctly predicted = 85.2 *** significant at 0.001; ** significant at 0.01; * significant at 0.05; + significant at .10 (two-tailed tests)			

Appendix 1: Agencies Surveyed

1. Board of Law Examiners
2. Office of the Attorney General of Texas
3. General Land Office
4. Texas State Library and Archives Commission
5. Texas State Auditor's Office
6. Texas Department of Information Resources
7. Texas Workforce Network
8. Teacher Retirement System of Texas
9. Texas Department of Human Services
10. Employees Retirement System
11. Texas Real Estate Commission
12. Texas Department of Housing and Community Affairs
13. State Pension Review Board
14. Texas Department on Aging
15. Texas Lottery Commission
16. Texas Veteran's Commission
17. Texas Military Facilities Commission
18. Texas Commission on Fire Protection
19. Texas Savings and Loan Department
20. Texas Department of Banking
21. Texas Department of Licensing and Regulation
22. Texas Department of Insurance
23. Board of Plumbing Examiners
24. Texas Alcoholic Beverage Commission
25. Texas Board of Architectural Examiners
26. Texas Office of Consumer Credit Commissioner
27. Texas Credit Union Department
28. Texas Structural Pest Control Board
29. Public Utility Commission of Texas
30. Texas Commission on State Emergency Communications
31. Texas Department of Health
32. Texas State Board of Barber Examiners
33. Texas Board of Medical Examiners
34. Board of Nurse Examiners
35. Texas Funeral Service Commission
36. Texas State Board of Pharmacy
37. Texas State Board of Examiners of Psychologists
38. Texas Department. of Protective and Regulatory Services
39. Interagency Council on Early Childhood Intervention
40. Executive Council on PT & OT Examiners
41. Texas Forest Services
42. Texas State Board of Veterinary Medical Examiners
43. Texas Water Development Board
44. Texas Department of Transportation
45. Texas Department of Mental Health and Mental Retardation
46. Texas Juvenile Probation Commission
47. Texas Department of Criminal Justice – Administration
48. Texas Education Agency
49. Texas State Board for Educator Certification
50. Texas Transportation Institute
51. Texas Higher Education Coordinating Board
52. Texas Parks and Wildlife Commission
53. Texas Historical Commission

Appendix 2: Variables Measured and Descriptive Statistics

Variables	Survey items	Min.	Max.	Mean	Std. dev.
Intent to leave	I plan to be working for this organization in two years (1=No, 0=Yes)	0	1	.16	.37
Supervisor	I am currently in a supervisory role (1=Yes, 0=No)	0	1	.23	.42
Primary earner	I am the primary wage earner in the household (1=Yes, 0=No)	0	1	.66	.48
Household size	Persons in my household, including myself (1=1; 2=2; 3=3; 4=4; 5=5 or more)	1	5	2.75	1.23
Age	If age is 30-59 = 1, less than 30 = 0	0	1	.63	.48
Years in state of Texas	Years that I have lived in this state: 1= less than 2; 2 = 2-10; 3 = over 10	1	3	2.91	.32
Agency experience	Years of service with this organization: 1=6 + years, 0 = 5 years or less	0	1	.60	.49
Education	Bachelors degree or higher = 1; less than bachelors degree = 0	0	1	.49	.50
Female	Male = 0; females =1	0	1	.67	.47
African American/Black	African-American/Black = 1; all others =0	0	1	.14	.34
Hispanic/Mexican-American	Hispanic/Mexican-American = 1; all others = 0	0	1	.25	.43
Asian-American/Pacific Islander/Native American	Asian-American/Pacific Islander/Native American = 1; all others =0	0	1	.02	.14
Multiracial/other	Multiracial/others = 1; all others = 0	0	1	.04	.20
Job satisfaction	My job meets my expectations	1	5	3.44	1.07
Workload	The amount of work I am asked to do is reasonable	1	5	3.30	1.19
Salary	1=\$45,001 or more, 0 = \$45,000 or less				
Fair pay	Salaries are competitive with similar jobs in the community.	1	5	2.40	1.17
Benefits (Cronbach alpha = .823)	I am satisfied with my medical insurance/sick leave/vacation/retirement/dental insurance/vision insurance/holiday benefit/Employee Assistance Program	8	44	26.20	5.61
Merit promotion	I received a merit promotion in the last two years (1=Yes, 0=No)	0	1	.23	.42
Family-friendly work practices	When possible, alternative work schedules (flex time, compressed work weeks, job sharing, telecommuting) are offered to employees	1	5	3.50	1.24
Diverse workforce practices	We work to attract, develop and retain people with diverse backgrounds	1	5	3.35	1.16
Employee development (Cronbach alpha = .761)	Training is made available to us for personal growth and development. We have access to information about job opportunities, conferences, workshops, and training.	2	10	6.92	1.94
Commitment (Cronbach alpha = .787)	There is a basic trust between employees and supervisors We feel a sense of pride when we tell people that we work for this organization Within my workplace, there is a feeling of community	3	15	10.08	2.90
Empowerment	Decision making and control are given to employees doing the actual work	1	5	3.03	1.20
Voice (Cronbach alpha = .853)	The work atmosphere encourages honest and open communication My ideas and opinions count at work People who challenge the status quo are valued	3	15	9.18	3.10

All data are from the Survey of Organizational Excellence. Unless otherwise noted, all responses are based on a 1-5 scale: 1= strongly disagree, 2 = strongly agree, 3 = feel neutral, 4 = agree, 5 = strongly agree. Respondents also have the opportunity to choose “don’t know/not applicable.” Such responses are excluded from the scale.

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Notes

ⁱ In describing the level of turnover intention in Texas we might ask whether this is too high. It should be noted that there is no clear agreement on what an optimal level of turnover looks like. Some turnover is helpful in creating space for internal promotions and introducing organizational learning and innovation through new employees. On the other hand, voluntary turnover implies the loss of an employee the organization would otherwise wish to continue to employ, as well as hiring and training costs. On the whole, the bias in studies of turnover is that less is better. That said, we do not have any strong empirical basis to determine if turnover among Texas state employees is actually damaging state government performance. However, recent research by Meier and Hicklin (forthcoming) sheds some light on this question. They test whether there is an inverted-U shaped relationship between turnover and performance, i.e., at relatively low levels turnover improves performance by bringing in new employees, but that after a certain point turnover becomes too great and is negatively related to performance. Using two measures of high-school performance, Meier and Hicklin find mixed evidence. For test scores, turnover has a linear and negative effect on performance, suggesting that any level of turnover was damaging. However, turnover did have a non-linear relationship for a secondary organizational goal characterized by greater task difficulty, preparing students for college. This suggests that the relationship between turnover and performance is contingent on the nature of the task. Given that most public organizations have tasks of varying complexity, this makes it difficult to make definitive statements about what the optimal level of turnover would be.

ⁱⁱ Forty four percent of State of Texas employees are nonwhite, which matches the proportion of nonwhites among respondents. The mean age of a state of Texas employee was 42.4 years in 2002. Among respondents, the most frequently selected age category was the 40-49 range. The experience of respondents in our sample is also similar to the overall state workforce. Almost 40 percent have less than five years of experience. The equivalent number for the entire workforce is 43 percent. The one area where there is a sizeable difference between our respondents and the state workforce is in gender. Fifty six percent of state employees are female, compared to 67 percent of respondents. However, this is primarily because our sample did not sample the Department of Criminal Justice, and of the remaining state agencies, 66 percent are women, consistent with our respondents. Our model includes measures of all of the relevant demographic factors, ensuring that the results of other independent variables are not affected by any possible sample bias.

ⁱⁱⁱ Given that it is still possible that some employees in their late fifties could be eligible for retirement, we also ran the model excluding all employees over 50, reducing the N size to 17, 470. The results for age remain the same, although some other variables that are logically correlated with age fall from significance: supervisor, and salary.

^{iv} For example, males in the sample were much more likely than females to be primary earners, and so dropping the primary earner variable might be expected to impact our findings. If we drop the primary earner variable for the model, the gender findings remain significant, although the gender probability differential of quitting declines from 2.7 to 2.3 percentage points. The odds ratio also slightly declines, as and women become 20% rather than 23% less likely than men to state an intention to quit.

^v <http://www.hr.state.tx.us/workforce/Turnover2004/Gender.html>

^{vi} Since it is likely that family friendly policies are more likely to be relevant for working mothers than other groups, we tested the interaction of family friendly policies and gender. Contrary to expectations, we found that this interaction of female status and family friendly policies was positively related to turnover intention, and significant at the .05 level. However, once we also incorporated size of household through a three way interaction effect, this variable was significantly and negatively related to turnover, i.e. women from larger households who perceived a family-friendly work environment were less likely to state an intention to quit. The inclusion of these interaction terms also had the effect of moving the original family friendly variable into the .05 level of significance. Overall, the interaction terms suggest that the findings reported in table 1 may somewhat underestimate the importance of family friendly policies, especially for women with familial responsibilities.

^{vii} Following the example of Lee and Whitford (forthcoming), we also explore some of the potential interaction affects between diversity practices and particular groups – do they have a greater effect for certain groups than others in reducing turnover intention? Lee and Whitford did not find such an interaction, and neither did our analysis. Interactions of diversity practices with white males, Hispanics, or blacks did not prove to be significant predictors of turnover intention.