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So Hard to Say Goodbye? Turnover Intention among U.S. Federal Employees

New Thinking
about Motivating
Public Employees

Why do U.S. federal government employees choose to leave the federal service? By focusing on turnover intentions, this article develops propositions about why employees anticipate leaving their jobs along three dimensions: (1) demographic factors, (2) workplace satisfaction factors, and (3) organizational relational factors. Two distinct measures of turnover intention are advanced that reflect those who intend to leave their agency for another position within the federal government and those who intend to leave the federal government for an outside position. The 2006 Federal Human Capital Survey is used to test the impacts of three clusters of independent variables on these measures of turnover intention. The findings suggest that overall job satisfaction and age affect turnover consistently. Practical recommendations are outlined for public managers seeking to boost employee retention.

In this study, we examine the factors that predict whether an employee chooses to voluntarily leave the federal service. Turnover among U.S. federal government employees has been a consistent concern for at least the past 20 years. During the 1980s, fears that antigovernment sentiment, declining relative pay for federal employees, and initiatives aimed at downsizing the federal bureaucracy were

hindering government's ability to hire and retain skilled workers led the Volcker Commission to warn of a "quiet crisis" in the federal civil service. By 2000, Congress and the George W. Bush administration began sounding the alarm of an impending "human capital crisis" that would involve massive turnover and retirement. Studies by the Government Accountability Office (formerly the General Accounting Office) and congressional hearings led by Senator George V. Voinovich and Representative Joe Scarborough cited dire shortages of skilled employees in the Departments of Defense and State (GAO 2001; U.S. Senate 2000). In response to

these developments, the Bush administration made employee recruitment and retention a priority by requiring agencies to develop human capital strategies and evaluation plans.

Job turnover has become such a pressing issue, in part, because of the serious consequences that it creates for managers. In addition to creating turmoil and causing disruptions in service delivery, turnover imposes considerable costs on organizations: separation costs such as severance pay, as well as replacement costs, including the cost of hiring, screening, and training new employees. The average turnover costs for a full-time professional employee in the private sector have been estimated to be as high as 150 percent of the employee's annual compensation package (Schlesinger and Heskett 1991). While it seems intuitive that some turnover can be a positive influence on performance, the bulk of the literature suggests that organizations with greater personnel stability perform better than those with less stability (Meier and Hicklin 2008; O'Toole and Meier 2003; but see Abelson and Baysinger 1984).

In this study, we examine the factors that predict whether an employee chooses to voluntarily leave the federal service.

Public administration researchers have begun to explore the determinants of turnover in public organizations. Most of these studies have focused on the organization as the unit of analysis, identifying a number of factors related to turnover, including opportunities for internal advancement, provision of on-site day care and other family-friendly policies, unionization, average workforce age, and percentage of employees working full time (Durst 1999; Selden and Moynihan 2000). This study seeks to expand the understanding of turnover in the federal government by taking a deeper look at how turnover intention operates at the individual employee level. Specifically, we examine how the demographic characteristics of employees, employee attitudes, and employee perceptions of management and coworkers influence turnover intention. Using

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research from organization theory and public administration as a foundation, we develop a model of turnover intention and test it using data on U.S. federal employees.

Determinants of Employee Turnover

A growing body of research in both organization theory and public administration points to a number of common factors frequently associated with turnover. Previous studies have found turnover to be a function of organizational characteristics, economic and labor market conditions, demographic characteristics of employees, employee job satisfaction, and employee perceptions of management and the work environment (Cotton and Tuttle 1986; Kellough and Osuna 1995; Lambert,

Hogan, and Barton 2001; Lewis 1991; Mobley et al. 1979). Our analysis organizes these factors into three clusters, which we will discuss in turn: demographic factors, workplace satisfaction factors, and organizational/relational factors.

Demographic Factors

Demographic characteristics appear to strongly influence employee decisions to exit an organization. For example, older workers are less likely than younger ones to intend to leave an organization. Younger employees have higher quit rates as a result of shifting career paths, greater willingness to relocate, and fewer family responsibilities and financial obligations (Kellough and Osuna 1995; Lewis 1991; Meyer et al. 1979). Generational differences also encourage younger employees to change jobs and sector of employment frequently after earning their degrees (Stark 2007). For example, recent public policy graduates are more likely than those from older generations to go between the public and private sectors (Chetkovich 2003). In addition, the draw of the federal service historically has been the stability of employment and the generous benefits plans that were offered. As Generations X and Y put less stock in stability and benefits, there is a greater likelihood of turnover among those groups because those who are drawn to the federal service are not likely to stay in order to take advantage of the job security and nonpecuniary benefits that government jobs offer (see, e.g., Lewis and Frank 2002).

Job tenure also appears to have a strong negative influence on turnover (Blau and Kahn 1981; Cotton and Tuttle 1986; Lambert, Hogan, and Barton 2001; Lewis 1991; Sørensen 2000). Turnover is greatest at the earliest stages of employment, but it declines rapidly over the first five years and then more slowly up to about 15 years of service (Lewis 1991). A principal explanation for this trend is that social interaction in the workplace tends to engender affinity and loyalty toward the organization and its members, thus reducing the propensity for turnover (Sørensen 2000). This reflects Hirschman's (1970) classic theory of exit, voice, or loyalty. As an employee remains with an organization over time, he or she will be motivated to respond to changes within it by exiting, voicing concern, or remaining loyal. Practically speaking, federal government agencies often incentivize a version of "loyalty" by providing retirement benefits that grow substantially as employees put more time into the system (Ippolito 1987). Once an employee has a certain number of years of experience in federal employment, he or she may refrain

from leaving or retiring early out of consideration for the potential loss in retirement earnings.

A third demographic factor in turnover is employee race/ethnicity, but research is inconsistent as to whether nonwhite employees

are more or less likely than whites to exit. Blau and Kahn (1981) found that African Americans quit less frequently than whites with similar personal and job characteristics because of shorter expected job tenure and weaker labor force attachment in private firms (see also Zax 1989). However, Kellough and Osuna (1995) found no significant relationship between race/ethnicity and quit rates across federal agencies. While early work on turnover focused on the direct effects of

demographic variables on turnover, Lambert, Hogan, and Barton (2001) argued that demographic variables have indirect effects on turnover through job satisfaction. Choi (2009) tested the relationships between race/ethnicity, diversity management, and turnover, finding that although nonwhite employees were more likely to intend to leave than white employees, diversity management programs did not moderate the relationship.

Workplace Satisfaction Factors

Job satisfaction has been a dominant theme in turnover research. A large body of empirical research indicates a consistent and inverse relationship between overall job satisfaction and turnover (Carsten and Spector 1987; Cotton and Tuttle 1986; Lambert, Hogan, and Barton 2001; Mobley et al. 1979; Porter and Steers 1973). Importantly, dissatisfaction with pay is among the strongest predictors of employee quit propensity (Blau and Kahn 1981; Cotton and Tuttle 1986; Lambert, Hogan, and Barton 2001; Park, Ofori-Dankwa, and Bishop 1994; Shaw et al. 1998). High pay reduces quit rates because employees maximize their own self-interest through staying (Shaw, et al., 1998). Higher wages also reduce incentives to search and the probability of finding a better-paying job (Blau and Kahn 1981). Finally, higher wages can lessen an employee's level of anxiety about his or her financial state and enhance perceived self-worth to the organization (Lambert, Hogan, and Barton 2001).

Satisfaction with benefits is also important in the context of government, where benefits historically have provided a comparative recruitment advantage over other sectors. Generous retirement and health care benefits can reduce turnover (Shaw et al. 1998), and the threat of losing pension benefits because of early departure can discourage employees from leaving government jobs (Ippolito 1987). The scope and flexibility of benefit options are also important because of the increasing participation of women in the labor market, the increasing number of dual-career families, and rising living costs, particularly for medical care (Williams and Dreher 1992).

Satisfaction with opportunities for career growth and promotion also has been found to negatively influence voluntary turnover (Cotton and Tuttle 1986; Griffeth, Hom, and Gaertner 2000; Porter and Steers 1973; Spector 1985). Mobley et al. (1979) argued that dissatisfied employees evaluate the expected utility of a job search and the cost of quitting, then decide whether they will stay or quit. Employees also compare their promotion opportunities and

decide to remain or leave for preferable alternatives based on their perceptions of equity (Porter and Steers 1973). Promotion leads to higher levels of satisfaction, organizational commitment, intrinsic motivation, and job involvement, lowering the probability of exit (Johnston et al. 1993). Moreover, promotion typically is accompanied by a wage increase, which is likely to reduce turnover (Johnston et al. 1993). Satisfaction with opportunities for advancement may be particularly relevant in the case of the U.S. federal government, where expectations and criteria for promotion tend to be more transparent than in private or nonprofit organizations with more ambiguous position descriptions.

Organizational/Relational Factors

A series of factors related to the organization and an employee's relationships with others also have been found to influence turnover. For example, public management reforms related to performance are argued to boost employee satisfaction, productivity, and retention. The standard argument behind performance-based pay has been that employees who are not rewarded for doing a good job will not be incentivized to work hard or to progress to the next level in their careers (Kellough and Lu 1993). Those employees may leave the organization and perhaps the federal government more broadly as they see poor performers rewarded at the same level as high performers. On the other hand, poor performers may be *more* comfortable with an organization that does not differentiate between employees who perform at different levels, which would make them less likely to leave. Therefore, it is difficult to predict whether the net impact of performance-based initiatives will be positive or negative.

Further complicating matters is the possibility that extrinsic reward systems such as performance-based pay will "crowd out" employees' intrinsic motivation. Perry and Wise (1990) raised this idea in the public administration literature when they suggested that "utilitarian" incentive structures might not be appropriate for public organizations, as those organizations' employees will be motivated more by public service ideals than monetary rewards. Outside public administration, Frey and colleagues (e.g., Frey 1997; Frey and Jegen 2001; Frey and Oberholzer-Gee 1997) have devoted considerable effort to developing and testing "motivation crowding theory." Frey and Gotte (1999), for instance, showed that when financial rewards are provided to volunteers, their work effort decreases significantly. Additionally, Frey and Oberholzer-Gee (1997) adduced evidence suggesting that individuals are less likely to support the locating of NIMBY ("not in my backyard") projects (i.e., projects such as prisons or airports that increase overall social welfare but impose costs on those who live near them) when they are offered monetary compensation. More generally, Frey and colleagues argue that pay-for-performance systems will not necessarily work in the way they are intended—that is, to spur work effort and productivity. For our purposes, their arguments imply that the existence of such systems (or, more broadly, the existence of a "performance culture") in public organizations may induce turnover rather than curtail it.

Since the 1980s, public agencies and private firms increasingly have been relying on participative management techniques and employee empowerment practices aimed at sharing authority, information, and resources with frontline employees in order to improve performance (Bowen and Lawler 1992, 1995; Kim 2002; Lawler, Mohrman, and Ledford 1995; Peters 1996). Effective participation is theorized to

enhance retention by signaling to employees that their efforts are valued (Griffeth, Hom, and Gaertner 2000; Huselid 1995; Lambert, Hogan, and Barton 2001; Shaw et al. 1998). Participation also encourages employee's self-identity and creates a sense of obligation to support organizational goals (Allen, Shore, and Griffeth 2003). From a psychological perspective, empowerment is a process leading to an internal cognitive state characterized by increased intrinsic task motivation (Thomas and Velthouse 1990) and enhanced feelings of self-efficacy (Conger and Kanungo 1988). Empirical findings show that empowerment can improve productivity, raise levels of employee satisfaction and organizational commitment, promote job involvement, and encourage innovativeness (Guthrie 2001; Kirkman and Rosen 1999; Lawler, Mohrman, and Ledford, 1992, 1995; Spreitzer 1995). There is good reason to believe, therefore, that employees who feel empowered will be less likely to leave.

Other employee relationships with management and coworkers also should help account for turnover. Studies consistently have shown that an employee's satisfaction with his or her relationships with other employees and supervisor is negatively associated with turnover (Cotton and Tuttle 1986; Griffeth, Hom, and Gaertner 2000; Lambert, Hogan, and Barton 2001). Scot et al. (1999) found that communication with supervisors and coworkers alleviated intent to leave. They argued that open and frequent communication lowers turnover by "reducing the uncertainty and equivocality" and by reinforcing worker's feelings of identification with the organization. Costigan, Ilter, and Berman (1998) also maintained that trust in a supervisor is negatively related to intention to leave voluntarily. This work echoes leadership research showing that high-exchange relationships between leaders and followers involving high levels of mutual trust result in higher subordinate satisfaction, stronger organizational commitment by the subordinate, and higher subordinate performance (Bass 1990; Graen and Scandura 1987; Graen and Uhl-Bien 1991; see also Yukl 2002). A high level of trust and confidence in a supervisor may result in broad grants of discretion and increase the likelihood of receiving desirable rewards, thereby decreasing the likelihood of exit.

Data and Measurement

We test the extent to which these three clusters of factors are associated with employee turnover intention using data from a sample of more than 200,000 U.S. federal government employees. The specific data for this study are drawn from the 2006 Federal Human Capital Survey (FHCS) administered by the U.S. Office of Personnel Management. The data are representative of full-time, permanent employees on key demographic and geographic indicators.

Dependent Variables

Our outcome of interest is turnover intention, a common surrogate for actual turnover in public administration research (Bertelli 2007; Kim 2005). Data limitations prevent us from predicting *actual* turnover, but research has demonstrated that turnover intention and actual turnover are highly and positively correlated (Dalton, Johnson, and Daily 1999; Steele and Ovalle 1984; Tett and Meyer 1993). At its most basic level, turnover intention is measured as whether an employee intends to leave the organization. In the FHCS, the relevant question is, "Are you considering leaving your organization within the next year, and if so, why?" We create two dependent variables from the responses to this question.¹

We first measure turnover intention as a dichotomous variable, where 1 represents those who plan to leave their agency to take another job within the federal government, and 0 represents all others. We label this variable “Leaving Agency” in the tables, and we find that roughly 16.1 percent of employees plan to leave for another federal job. Our second measure of turnover intention focuses on the intention to leave the federal government for an outside position. For this measure, 1 represents those who plan to leave their agency for a job outside the federal government, and 0 represents all others. We label this variable “Leaving Government” in the tables, and we find that roughly 3.6 percent of employees plan to leave their jobs for an outside position. We omit those planning to retire, as the factors that predict retirement are likely different from those that predict turnover for another job.

Independent Variables

To examine the factors that influence turnover intention, we include three clusters of independent variables in our model, the first being demographic factors. The FHCS asked employees to categorize their age as under 30, 30–39, 40–49, 50–59, or 60 and over. We use these responses to create a series of dummy variables, one for each of the age categories. The largest group of employees is 50–59 years old (39.3 percent), followed by 40–49 (33.4 percent), 30–39 (14.2 percent), and 60 and older (9.1 percent). Only 4.0 percent are under the age of 30. There are descriptive differences between these groups in turnover intention. Between 21 percent and 23 percent of employees in the youngest three age groups report planning to leave their jobs for another job within federal government, a figure that decreases to 15 percent for the 50–59 age group and to 6 percent for those over age 60. Propensity to leave for a job *outside* the federal government decreases with age, moving from 9 percent in the youngest age group to 2 percent in the oldest. For agency tenure, employees were asked to categorize how long they had been with their agency on a six-point scale. The resulting frequencies are 0.1 percent, less than one year; 2.8 percent, 1–3 years; 1.9 percent, 4–5 years; 3.9 percent, 6–10 years; 75.5 percent, 11–20 years; and 15.9 percent, more than 20 years. We assign a value of 1 to the first group and 6 to the last, treating this as an ordinal variable in our analysis.² For race/ethnicity, we code white as 1 and nonwhite as

0, finding that just under 70 percent of employees in our sample consider themselves white.³ Descriptive statistics for all variables are reported in table 1.

We also test variables related to workplace satisfaction, the first being responses to a measure of overall job satisfaction: “Considering everything, how satisfied are you with your job?” Response options included “very satisfied” (21.3 percent), “satisfied” (46.8 percent), “neither satisfied nor dissatisfied” (17.2 percent), “dissatisfied” (10.3 percent), and “very dissatisfied” (4.4 percent). Employees also were asked, “Considering everything, how satisfied are you with your pay?” The results here are slightly less positive: 17.8 percent are very satisfied, 47.6 percent are satisfied, 16.6 percent are neutral, 13.2 percent are dissatisfied, and 4.8 percent are very dissatisfied. For satisfaction with benefits, we use factor analysis to combine three questions: “How satisfied are you with retirement benefits?,” “How satisfied are you with health insurance benefits?,” and “How satisfied are you with life insurance benefits?” The variables load onto one factor with an eigenvalue of 1.380, and the Cronbach’s alpha is 0.76. For advancement opportunity, we use data from the question, “How satisfied are you with your opportunity to get a better job in your organization?” Nine percent report being very satisfied; 28.5 percent, satisfied; 29.9 percent, neutral; 19.9 percent, dissatisfied; and 12.5 percent, very dissatisfied.

Our next set of variables includes organizational/relationship factors. To measure empowerment, we use data from the question, “Employees have a feeling of personal empowerment with respect to work processes.” On this question, 7.6 percent strongly agree, 37.9 percent agree, 29.7 percent are neutral, 16.6 percent disagree, and 8.1 percent strongly disagree. To measure performance culture, we combine responses to four questions: “Promotions in my work unit are based on merit,” “Employees are rewarded for providing high quality products and services to customers,” “Pay raises depend on how well employees perform their jobs,” and “Awards in my work unit depend on how well employees perform their jobs.” All four load onto one factor, with an eigenvalue of 2.407 and a Cronbach’s alpha of 0.87. We also include two measures related to relationships with supervisors and coworkers. For coworkers, we use the question, “The people I work with cooperate to get the job done.” The responses are very positive: 32.3 percent strongly agree, 52.9 percent agree, 7.9 percent are neutral, 5.5 percent disagree, and 1.3 percent strongly disagree. For supervisors, we use the average from two questions: “I have trust and confidence in my supervisor” and “Overall, how good a job do you feel is being done by your immediate supervisor?”

Finally, we interact age with two variables—satisfaction with benefits and satisfaction with advancement—to test whether the effects of these variables on turnover intention are different across age groups. Satisfaction with benefits presumably will have a greater influence on turnover intention at higher age levels. Employees who are nearing retirement stand to lose more by turning over than younger employees, so we expect that as employees get older (and closer to retirement), the quality of their benefits becomes a more important factor than it is for younger employees. Conversely, as employees get older and nearer to retirement, opportunities for advancement will become less important, since they will have already approached the limits of advancement. As a result, we expect that satisfaction with opportunities for advancement will tend to more strongly influence the turnover decisions of younger workers.

Table 1 Descriptive Statistics

Dependent Variables	Mean	S.D.	Minimum	Maximum
Turnover: Leaving Agency	0.163	0.370	0	1
Turnover: Leaving Federal Government	0.036	0.187	0	1
Independent Variables	Mean	S.D.	Minimum	Maximum
Age	3.361	0.965	1	5
Agency tenure	4.990	0.732	1	6
Race/ethnicity	0.693	0.461	0	1
Job satisfaction	3.705	1.049	1	5
Satisfaction with pay	3.606	1.070	1	5
Satisfaction with benefits	0	0.825	-2.905	1.441
Satisfaction with advancement	3.016	1.161	1	5
Performance culture	0	0.917	-1.936	1.800
Empowerment	3.208	1.064	1	5
Relationship with supervisor	3.771	1.108	1	5
Relationship with coworkers	4.095	0.856	1	5

Findings

We employ two models to test our research questions using logistic regression with robust standard errors clustered by agency (table 2). Our first model considers the impact of our three clusters of independent variables on the employee's intention to leave his or her agency. Recall that in this model, our dependent variable is coded 1 for those who plan to leave their agency to take another job within the federal government and 0 otherwise. By contrast, our second model uses a dependent variable that assigns employees a 1 if they intend to leave the federal government for an outside position and a 0 otherwise.

To explain the substantive significance of our independent variables, we use a series of Monte Carlo estimations to show how an employee's probability of turnover intention is influenced by two different types of changes in our independent variables: (1) moving from the minimum to the maximum possible value, and (2) increasing the value by a mean-centered standard deviation (table 3). Minimum to maximum changes (i.e., a zero to one changes) are calculated for each dummy variable, while mean-centered standard deviation changes are calculated for all others. In running these simulations, all independent variables except the one being changed are held constant at their mean values.

Demographic Factors

We begin our analysis by examining the findings for our cluster of demographic variables, starting with age. An interesting pattern of results emerges in which age is positively and significantly related

to one's intention to leave his or her agency within the coming year ("Leaving Agency" model) for the first two age categories, and negatively related to agency turnover intention for the last category. The predicted probability of an individual expressing an intention to leave his or her agency is 0.117 (or 11.7 percent) when our first age variable is set to zero and all other independent variables are held at their means (table 3). When this variable is changed to one, the predicted probability of turnover intention increases from 0.117 to 0.163, or by 4.7 percentage points (second column). Movement into the 40–49 age category is associated with a 4.5 percentage point increase in the predicted probability of turnover intention; movement into 50–59 age category is associated with a 2.9 percentage point decrease (although nonsignificant); and movement into the top age category is associated with a *decrease* of 9.9 percentage points in the predicted probability of turnover intention.

When it comes to sector ("Leaving Government" model), age again seems to matter, albeit in a different way. There is a consistent negative (and statistically significant) relationship between age and whether one intends to leave the federal government for a job in another level of government, a nonprofit, or a for-profit firm. The magnitude of this relationship is largest for the 50–59 age bracket, where moving from the baseline age category to this category decreases the predicted probability of turnover intention by 2.9 percentage points (table 3). Whereas increases in age appear to initially

Table 2 Logit Results for Turnover Intention

	Leaving Agency		Leaving Government	
	Coef.	SE	Coef.	SE
Age: 30–39 years	0.385*	(0.135)	-0.394*	(0.0948)
<i>Base category: 29 years and under</i>				
Age: 40–49 years	0.394*	(0.123)	-0.945*	(0.0942)
Age: 50–59 years	-0.280	(0.130)	-1.316*	(0.0997)
Age: 60 years or over	-1.393*	(0.139)	-1.200*	(0.162)
Agency tenure	-0.146*	(0.0375)	-0.148*	(0.0250)
Race/ethnicity	0.300*	(0.0406)	-0.656*	(0.0536)
Job satisfaction	-0.444*	(0.0163)	-0.432*	(0.0258)
Satisfaction with pay	-0.0534*	(0.00871)	-0.214*	(0.0199)
Satisfaction with benefits	0.150*	(0.0461)	-0.126	(0.0626)
Satisfaction with advancement	-0.341*	(0.0321)	-0.208*	(0.0337)
Performance culture	0.0556*	(0.0173)	0.0275	(0.0259)
Empowerment	-0.0119	(0.0146)	-0.0727*	(0.0237)
Relationship with supervisor	-0.105*	(0.0106)	-0.0182	(0.0132)
Relationship with coworkers	-0.0129	(0.0108)	-0.00753	(0.0131)
Age: 30–39 * satisfaction with advancement	-0.0355	(0.0401)	0.0771	(0.0327)
Age: 40–49 * satisfaction with advancement	-0.0706	(0.0362)	0.0752	(0.0340)
Age: 50–59 * satisfaction with advancement	-0.0441	(0.0386)	0.0930*	(0.0315)
Age: 60 or more * satisfaction with advancement	-0.0379	(0.0493)	-0.0144	(0.0524)
Age: 30–39 * satisfaction with benefits	-0.0492	(0.0453)	0.0440	(0.0670)
Age: 40–49 * satisfaction with benefits	-0.0482	(0.0582)	-0.0673	(0.0612)
Age: 50–59 * satisfaction with benefits	-0.0988	(0.0432)	-0.0812	(0.0717)
Age: 60 or more * satisfaction with benefits	-0.261*	(0.0599)	0.0613	(0.0631)
Constant	2.230*	(0.195)	1.352*	(0.195)
Observations	217504		217504	
Pseudo R ²	0.147		0.104	

Notes: Unstandardized coefficients reported. Robust standard errors are shown. Starred coefficients are significant at $p < .01$, two-tail tests.

Table 3 Predicted Probabilities and First Differences for Turnover Intention

Independent Variable	Leaving Agency		Leaving Government	
	Prob.	Diff.	Prob.	Diff.
All variables at their means	0.123		0.024	
Age: 30–39 years	Min	0.117		0.026
	Max	0.163	0.047	0.017 -0.008
Age: 40–49 years	Min	0.109		0.032
	Max	0.155	0.045	0.013 -0.020
Age: 50–59 years	Min	0.135		0.040
	Max	0.106	-0.029	0.011 -0.029
Age: 60+ years	Min	0.137		0.027
	Max	0.038	-0.099	0.008 -0.019
Race/ethnicity	Min	0.113		0.029
	Max	0.147	0.034	0.015 -0.014
Agency tenure	Mean – (SD/2)	0.128		0.025
	Mean + (SD/2)	0.117	-0.012	0.023 -0.003
Job satisfaction	Mean – (SD/2)	0.150		0.030
	Mean + (SD/2)	0.100	-0.050	0.019 -0.011
Satisfaction with pay	Mean – (SD/2)	0.126		0.027
	Mean + (SD/2)	0.120	-0.006	0.022 -0.005
Satisfaction with benefits	Mean – (SD/2)	0.116		0.025
	Mean + (SD/2)	0.129	0.013	0.023 -0.002
Satisfaction with advancement	Mean – (SD/2)	0.146		0.027
	Mean + (SD/2)	0.103	-0.043	0.021 -0.006
Performance culture	Mean – (SD/2)	0.120		0.024
	Mean + (SD/2)	0.125	0.006	0.024 0.001
Empowerment	Mean – (SD/2)	0.123		0.025
	Mean + (SD/2)	0.122	-0.001	0.023 -0.002
Relationship with supervisor	Mean – (SD/2)	0.129		0.024
	Mean + (SD/2)	0.116	-0.012	0.024 -0.000
Relationship with coworkers	Mean – (SD/2)	0.123		0.024
	Mean + (SD/2)	0.122	-0.001	0.024 -0.000

Notes: Predicted probabilities and first differences were calculated using King, Tomz, and Wittenberg's (2000) Clarify program in Stata 11. First differences were calculated for either a minimum to maximum change in the given independent variable (if a dummy) or a mean-centered standard deviation increase (if a nondummy), holding all other variables in the model at their means.

increase the probability of intending to leave one's agency and subsequently to decrease that probability, increases in age appear to consistently *decrease* the likelihood of intending to leave one's job in the federal government. Taken together, these results suggest that federal government employees in the middle age ranges are more likely than employees in the youngest age range to seek new employment opportunities within the federal government but less likely to leave the federal government for an outside position. While being more inclined to move around within the federal government (perhaps in search of a fresh experience) than their younger counterparts, employees in the middle age ranges appear less inclined to take the more drastic step of leaving federal government work entirely.

Unlike with our age variables, agency tenure exhibits consistent effects across both models. Longer agency tenure makes an individual less likely to intend to leave his or her agency and less likely to intend to leave the federal government entirely, although the latter is less substantively meaningful than the former. A standard deviation increase in tenure is associated with a 1.2 percentage point decrease in the predicted probability of an individual intending to leave his or her agency, compared to a 0.3 percentage point decrease in the predicted probability of intending to leave the federal government

altogether. These results suggest two potential options for managers. Agencies should consider ways to *either* exploit the likelihood of experienced workers to remain in the organization *or* better incentivize inexperienced employees to stay. These incentive structures likely would look very different, and future research should consider these competing options and their potential relative benefits.

As with age, the results for race and ethnicity differ across our two models. Nonwhite employees are more likely to leave their organization in general but less likely to report the intention to leave the federal government. Table 3 shows that the predicted probability of intending to leave one's agency is 3.4 percentage points higher for nonwhites than whites, while the predicted probability of intending to leave the federal government is about 1.4 percentage points *lower* for nonwhites. A potential explanation for these findings is that employees of color are more likely than whites to prefer working in the public service, guiding them to remain with the federal government even if they choose to leave their agency. On the other hand, it also could be that employees of color are more risk averse, and, perceiving themselves as less mobile than white employees, they do not intend to leave the federal government for another sector. More research is needed to understand why turnover patterns are different for white and nonwhite employees,

particularly in light of the many diversity management initiatives that currently exist in federal government agencies (Kellough and Naff 2004).

Workplace Satisfaction Factors

We next turn our analysis to the workplace satisfaction variables. As expected, overall job satisfaction makes an employee less likely to leave across the board: as job satisfaction increases, employees are less likely to intend to leave their agency for another within the federal government and less likely to intend to leave the federal government for outside work. These relationships are both statistically significant. In substantive terms, a standard deviation increase in job satisfaction is associated with a 5 percentage point decrease (from 0.150 to 0.10) in the probability of intending to leave one's agency and a 1.1 percentage point decrease (from 0.030 to 0.019) in the probability of intending to leave the federal government (table 3).

As expected, satisfaction with pay is negatively related to turnover intention in both models, but the substantive impacts are small. A standard deviation increase in satisfaction with pay is associated with less than a 1 percentage point change in the predicted probability of turnover intention. It is possible that the more general job satisfaction variable is soaking up some of the effect that satisfaction with pay may have on turnover intention. Because satisfaction with pay is undoubtedly one aspect of the larger job satisfaction construct, it is difficult to disentangle the impacts of the two variables. However, it does seem clear that the overall job satisfaction measure reflects much more than *just* satisfaction with pay, and those other components appear to account for a reasonable amount of the variation in turnover intention.⁴

Contrary to expectations, our analysis finds that satisfaction with benefits is positively related to an employee's intention to leave his or her agency and unrelated to an employee's intention to leave government. Results for satisfaction with advancement opportunity match expectations. Employees who report being satisfied with opportunities for advancement are less likely to intend to leave their agency and less likely to leave the federal government. More specifically, as table 3 illustrates, a standard deviation increase in satisfaction with advancement is associated with a 4.3 percentage point decrease in the predicted probability that an individual intends to leave his or her agency.

For the leaving government model, this figure is much smaller, less than 1 percentage point. That satisfaction with advancement opportunities has a much larger impact in the leaving agency model suggests that managers can use advancement opportunity as a strong incentive to promote intra-agency employee retention. Professional development opportunities and other programs that motivate an employee to work toward the next level in the organization can be useful tools toward this end.

As discussed earlier, we include a series of interaction terms in our models to test whether satisfaction with advancement and satisfaction with benefits have different effects on turnover intention for different age groups. We anticipated that advancement would be more important to younger workers' decisions (young workers

will not want to languish in jobs with no hope for promotion), while satisfaction with benefits would be more important to older workers' decisions. However, our results provide only minimal support for this proposition. Because only one of these interaction terms is statistically significant (Age: 50–59 years * satisfaction with advancement), it would appear that satisfaction with advancement and satisfaction with benefits do not influence turnover intention differently across age groups.

Organizational/Relational Factors

The first of this cluster of factors is performance culture. We find limited evidence that a culture of performance is a predictor of an employee's turnover intention. Interestingly, we show that a performance culture seems to *encourage* turnover intention in the "Leaving Agency" model. This suggests that reforms such as performance-based pay may lead to more exit than retention. The question then becomes *which* employees are likely to leave and which are likely to stay in the face of such reforms. For example, it could be that a performance culture is more likely to retain high performers and "weed out" the poor performers, which arguably would result in a net gain for government overall. This supports an argument that all organizations optimally have at least *some* amount of turnover (Abelson and Baysinger 1984).

The problem is that it is difficult to determine whether any given respondent is a strong or a weak performer. The FHCS asked respondents to evaluate their unit's performance ("How would you rate the overall quality of work done by your work group?"), which could be considered a proxy measure of individual employee performance. Of those who rated their unit's performance in the highest category, 84.8 percent indicated that they had no plans to leave their organization. By contrast, of those who rated their unit's performance in the lowest category, only 36.8 percent said that they had no plans to leave. The perceptual nature of these data prevent us from drawing strong conclusions, but the results suggest that, at a minimum, there are strong trends in turnover intention that run along performance lines. Much more research is necessary to understand the implications of performance-based reforms for retention and turnover, specifically on the characteristics of employees who indicate likelihood of exit in the face of these initiatives.

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The second variable in this cluster considers a key issue in leadership and organizational behavior: empowerment. Despite a great deal of attention to leadership approaches that empower employees and flatten hierarchy, we find a weak pattern of results when it comes to whether empowerment can decrease turnover. Empowerment does not relate to the intention to leave one's current agency, and the relationship between empowerment and intention to leave the federal government is statistically significant but substantively minor. A standard deviation increase in empowerment corresponds to a 1 percentage point decrease in the predicted probability of turnover intention. Compared to the other factors in our models (e.g., job satisfaction), the impact here is quite small, leading one to question whether empowerment is an effective lever for managers to use when it comes to retention.

The final two variables in this cluster considered relationships with supervisors and coworkers. For the first, we find that a positive relationship with one's supervisor makes an employee less likely to intend to leave his or her agency. Increasing an employee's score by a standard deviation is associated with a 1.2 percentage point decrease in the predicted probability of turnover intention. The impact of supervisory relationship on turnover intention in the leaving government model is not statistically significant, and coworker relationship is not significant in either of the two models. On balance, then, we find that the supervisor relationship appears to be more important than one's relationship with coworkers. There are a number of potential explanations for this finding. For example, government organizations historically have been structured very hierarchically, such that systems discouraged collaborative projects and team assignments in favor of individualized work that flowed up and down the chain of command. In this environment, one's supervisor has much more influence over day-to-day assignments and issues than coworkers. On the other hand, this result could be artificial to our data set and reflect a measurement issue. These data are arguably better able to capture the relationship with supervisor than the relationship with coworkers, which could lead to measurement error in the latter that clouds the variable's accuracy. More research is necessary to better understand how supervisor and coworker relationships affect an employee's turnover intention.

Conclusion

This research shows that a variety of factors affect whether employees intend to leave their jobs. Workplace satisfaction seems to play the largest role in predicting turnover intention, followed by demographic variables and organizational/relational factors. The most important factors varied according to the type of turnover being examined. For example, the most important predictors of an employee's intention to leave his or her agency are job satisfaction, satisfaction with advancement opportunities, and age. The most relevant factors for whether an employee plans to leave federal government are age, race/ethnicity, and job satisfaction.

These findings suggest that managers can use an array of tactics to encourage employee retention. The most important issue is overall job satisfaction, which means that managers must seek to understand the motivations and issues of individual employees in order to understand the specific issues that should be addressed. Age seems to relate strongly to retention. As age increases, the likelihood that individuals intend to leave their agencies first increases and then decreases. On the other hand, the likelihood that individuals intend to leave the federal government for outside work decreases consistently as age increases. This could point individual agencies toward boosting retention efforts for employees in the middle age ranges, or to government-wide efforts at retaining young employees. Managers can also focus on supervisor-em-

ployee relationships, which are related to retention in our leaving agency model. This would mean training supervisors in leadership and interpersonal relationships so that they build effective high exchange relationships with their subordinate employees. Finally, a key factor in our leaving agency model is opportunity for advancement. Giving employees the chance to work toward the next level of responsibility is key—individualized work plans and development programs are two ways to ensure that employees do not get stalled at a particular level.

This research raises several important questions for future work. For example, it is unclear whether and how different racial/ethnic groups are motivated to leave. Research on diversity management has shown that those

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groups can increase the job satisfaction of employees of color, but research on turnover is minimal. Given the underrepresentation of people of color in the upper ranks of the federal service, attention to this issue is important. It is also important to consider whether building a performance culture will have an impact on retention. If the impact is negative overall, as we find here, do performance-based reforms drive out the high performers, low performers, or a mix of the two? If the reforms drive out low performers, is this a good thing for the federal service? In an age when the federal government is losing knowledge from consistent retirement, it may not be able to afford to lose employees through other means, even if they are not at the top of the performance pool.

Workplace satisfaction seems to play the largest role in predicting turnover intention, followed by demographic variables and organizational/relational factors.

Another important question not addressed in the current study is how turnover intention maps onto actual turnover. Data limitations required us to use intention as a surrogate for actual turnover; ideally, analyses of individual turnover would include measures of both constructs. Future research should examine the relationship between the two: among those who intend to turnover, what differentiates those who decide to leave from those who decide to stay?

Our goal in this project was to test a series of propositions about what affects propensity to turnover. Data limitations prevented us from being able to test all propositions discussed in the literature, and we were limited in our ability to create comprehensive measures of all the important concepts that we included in our models. Future research focusing specifically on turnover could improve upon these measurement weaknesses and guard more firmly against omitted variables bias by collecting data on more variables. Qualitative research would be a valuable addition to this research agenda, as large-*N* quantitative research often misses important causal links that are identified in interviews or other open-ended data collection techniques. These next steps would help to better guide practicing public managers seeking to limit the number of employees who voluntarily exit the federal service, in addition to building on the growing theory base in public human resource management.

Notes

1. These data do not take into account involuntary turnover.
2. The data were collected by the Office of Personnel Management using a six-point ordinal response scale. An interval-level variable would have been more effective for our purposes, but categories provide some anonymity to respondents and may have helped boost the response rate.
3. Gender would have been an appropriate demographic variable to include in the analysis (Lewis and Park 1989), but data are not available for almost 140,000 respondents. Differences between this group and those who indicated their gender are statistically significant for all of our variables of interest, so we chose not to include gender in our model.
4. If job satisfaction and satisfaction with pay were the same, they would be perfectly correlated. As they become differentiated, collinearity gradually decreases, leading to standard errors that are less inflated and *t*-statistics that are higher. Given that these two variables are statistically significant at the 0.001 level with distinguishable odds ratios, it seems clear that these are measuring different concepts.

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