

**Aggregate Work Environment Measures and Job Separations
at the Federal Bureau of Prisons**

Scott D. Camp, Social Science Research Analyst
William G. Saylor, Deputy Chief
Evan Gilman, Supervisory Research Analyst
Office of Research and Evaluation
Federal Bureau of Prisons

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Social scientists hypothesize that the productivity of workers in organizations is related, in part, to their feelings of attachment to their jobs and their organizations. In particular, sociologists tend to argue that differences in organizational commitment help explain organizational behavior. Industrial psychologists, on the other hand, tend to emphasize the importance of workers' feelings of job satisfaction as being most important for understanding organizational behavior (Roznowski and Hulin 1992). Of course, the distinction drawn between the approaches pursued by sociologists and industrial psychologists is somewhat artificial in that there are sociologists who argue for the importance of job satisfaction and industrial psychologists who place primary emphasis on organizational commitment.

Since 1988, the Federal Bureau of Prisons has been tracking measures of job satisfaction and organizational commitment of workers actually employed in prisons through the annual administration of the Prison Social Climate Survey (Saylor 1984).¹ Measures derived from the PSCS are part of the data used by executive staff in reviewing Bureau of Prisons operations, including scales measuring both job satisfaction and organizational commitment. Job satisfaction and organizational commitment are evaluated by computing the average number of staff giving favorable responses for various aggregations of staff meaningful for operations at the Bureau of Prisons. Typically, executive staff compare the averages for individual institutions, the averages for different administrative regions, and the averages for different security levels.

¹A sizeable number of Bureau of Prisons staff work in central and regional offices and are not administered the Prison Social Climate Survey.

Previous research certainly vindicates the use of job satisfaction and institutional commitment as valid assessments of the conditions in the workplace facing individual workers. However, little of the previous research on organizational commitment and job satisfaction has been examined within the context of correctional institutions. While there is no a priori reason to suppose that working conditions in corrections are so different from other work settings that they are unique, there is still every reason to substantiate the appropriateness of work environment measures in a correctional setting. There is still much work to be done on clarifying the importance of organizational commitment and job satisfaction for understanding the organizational behaviors of workers.

Previous Research

Partial evidence for the utility of work environment measures in a correctional setting, in particular the Federal Bureau of Prisons, is provided by Wright (1993) and Camp (1994). Both Wright and Camp investigate the effects of job satisfaction and organizational commitment on job separations² and find that the level of institutional commitment is inversely related to job separation. That is, higher levels of institutional commitment are associated with lower level of job separations.

This study is an attempt to use the insights of the previous studies to further investigate the relationship between job separations, institutional commitment, job satisfaction, and other measures of the work environment. Camp (1994) provides a review of the literature outlining the

²Wright also examined other outcome measures, but the present discussion is limited to job separations. The relationship between job separations, organizational commitment and job satisfaction is commonly studied.

theoretical importance of work environment measures for job separations and prior empirical findings.

Kevin Wright, while serving as a Research Fellow at the BOP, investigated the nature of the relationships between work environment scales measuring institutional commitment, job satisfaction, and personal efficacy and outcome measures of job-related stress, job separations, union grievances, and grievances filed by inmates against staff. Of particular interest here are the models reported for job separations. Wright used individual BOP facilities as the unit of analysis and found that institutions with high levels of staff reporting favorable evaluations of institutional commitment had significantly lower rates of staff separations. This relationship existed in all four years—1988, 1989, 1990, and 1991—examined by Wright. On the other hand, Wright found that a significant relationship between job satisfaction and job separations was demonstrated only for the 1988 data. In 1988, institutions with high levels of staff giving favorable evaluations of job satisfaction were significantly less likely to have high rates of job satisfaction. Wright found no significant relationship between personal efficacy and job separations at the institutional level for any of the years he examined.

Camp (1994) also analyzed the relationship between measures of the work environment and job separations. Analyzing individual actions instead of institutional averages, Camp found, as did Wright, that institutional commitment is inversely related to the decision to voluntarily terminate employment at the BOP. Camp, though, was also interested in examining the effects of work environment scales not included in Wright's analysis, especially commitment to the BOP. Camp hypothesized that BOP commitment is a stronger predictor of voluntary turnover than institutional commitment. His actual findings, though, show that BOP commitment and

institutional commitment have effects of around the same magnitude. As in Wright's study, Camp found that job satisfaction and personal efficacy are not significantly related to job separations.

In addition to finding the significant relationship between BOP commitment and job separations, Camp demonstrated that other variables are significantly related to job separation. One of the most important variables found to exhibit a significant relationship with voluntary turnover at the BOP is gender. Women working at the BOP are more likely to quit their jobs than males with similar characteristics. In addition, Camp found BOP tenure and age to be inversely related to turnover.

Using the same data source, but different research strategies, both Wright and Camp found a significant relationship between institutional commitment and job separations. This certainly argues for the importance of institutional commitment as a measure of the work environment at the Bureau of Prisons. However, both studies allow only limited generalizations to be drawn about the impact of institutional commitment. The Wright study is limited by not including controls for factors found to be important in the research by Camp, especially commitment to the BOP. On the other hand, the research by Camp is limited to making generalizations only at the individual level. Where Wright investigated the relationships between measures of the work environment and outcome measures at the macro or institutional level, Camp's analysis is limited to the individual level. Most operational use of work environment scales at the BOP is at the institutional level.

Formally, there are four key differences in the approaches taken by Wright and Camp that need to be addressed to successfully merge the research strategies of these researchers to take another look at the relationships between work environment measures and job separations at the

macro or institutional level. This revised research strategy produces more comparable findings at the macro and individual levels and allows for an examination of whether relationships existing at one level of analysis operate at the other level of analysis.

First, the studies by Wright and Camp use different methodologies and units of analysis. Wright analyzed institutional averages in his analysis using ordinary least squares regression analysis. His unit of analysis, therefore, is the institution. Camp, on the other hand, analyzed individuals using event history techniques. After constructing an appropriate event history database, Camp analyzed the propensity of an individual to quit his or her job at the BOP given their self-reports on the work environment scales and other control variables using logistic regression methods.

Second, the studies by Wright and Camp differ in two ways with respect to the dependent variable examined even though both examine job separations broadly defined. In the study by Wright, job separations include individuals who have resigned, retired, or involuntarily terminated from the BOP. Camp, on the other hand, examined only individuals who voluntarily left employment. Camp used this restricted definition of job separation, normally defined as voluntary turnover, to avoid the assumption that the processes leading to retirement, quitting, and involuntary termination are the same. Also, the rates analyzed by Wright and Camp are slightly different. Wright analyzed what is known as a separation rate where Camp analyzed an instability rate (Price 1977: 15-17). A separation rate is computed by dividing the total number of separations during a time period by the average number of members during that period. An instability rate, which can easily underestimate the separation rate, refers to the percentage of people at the beginning of a period who separate over the course of some time period.

The third manner in which the Wright and Camp studies differ is with respect to the number of work environment and other control variables included in the analysis. Wright focused on the effects of three work environment scales, institutional commitment, job satisfaction, and personal efficacy. Camp, who examined only job separations, included other work environment scales in his models as well as variables to control for other confounding effects. Previous research on voluntary turnover suggest more inclusive models than the parsimonious models used by Wright.

Finally, the two studies differ in terms of the use of time. First, they examine different years. Wright examined the years 1988, 1989, 1990, and 1991 individually in his study. Camp selected his pool of respondents for analysis only from the 1991 Prison Social Climate Survey and followed them over a period of 19 months to capture changes in employment status. Second, the time dimension pertaining to the dependent variable is different. Wright used job separations and the work environment scales measured concurrently. Camp, on the other hand, analyzed job separations that occurred only after the Prison Social Climate Survey had been administered and the work environment scales measured.

The basic approach of the current study is to use the general strategy employed by Wright while making modifications suggested by the research findings of Camp. The intention of this research is to examine the correlates of job separations at the macro or institutional level in the tradition of Wright. As is discussed later in the paper, this macro level examination is an intermediate step to an eventual, more complex research design where the effects of macro and individual level measures on job separations are considered simultaneously.

Since this research is conducted at the institutional level, it analyzes the separation rate as

did Wright. There are theoretical and practical benefits to analyzing a separation rate depending upon the questions needing answered. Consider a hypothetical example. Let's say we have a work gang with 5 people in it. One of the jobs is so unpleasant that over the past year we had to hire 3 people to replace those previously holding the position. The separation rate is 60% in our example, e.g., number of quits, 3, divided by the average size of the group, 5 (times 100). The instability rate, on the other hand, is 20%. At the beginning of the period, we had 5 people. One of the 5 quit as we trace them over the time period giving a rate of 1 divided by 5 (times 100) or 20%.

Which is more useful, the separation rate or the instability rate? Again, it depends upon what question needs to be answered. But a practical matter for managers is to have some idea of how many times they are going to have to hire people to replace those who leave their jobs. This tends to point toward a separation rate which standardizes the number of hires (or quits depending upon perspective) as a percentage of the average work force.

Unlike the research conducted by Wright, the present research attempts to exclude from consideration separations that result from normal retirement from the BOP. Even though retirees have to be replaced (or not in these budget times), the processes leading to retirement are probably not the same as those leading to other types of separation. By examining only those individuals who separate from the BOP in their first 9 years of job tenure, it is hoped that the analysis is limited primarily to job separatees who either voluntarily or involuntarily separated from the BOP. Although it may seem questionable at first glance to include voluntary and involuntary terminations together, it is justified on the grounds that both types of termination represent organizational-individual mismatches where the individual does not remain part of the

organization. In practical terms, the effects of lumping voluntary and involuntary terminations together is probably not that important as extensive screening of employees at the BOP makes the need for involuntary removal later on a relatively rare event. Models using the separation rate for staff with up to 9 years of tenure are compared to models employing the separation rate based on all staff separations throughout the analysis.

The present study includes institutional measures that parallel individual level measures found to be important in understanding job separations in the Camp study. While BOP facilities are not male or female, they do employ male and female staff at differing rates. Therefore, it is possible to enter the percentage of female staff working at facilities into equations predicting job separations. Similar controls are entered for the other variables found by Camp to be important, e.g., tenure and age. Age and tenure are entered into models as the median values at the individual BOP facilities examined. Likewise, BOP commitment and other work environment scales are considered in models of job separation at the institutional level.

Additional controls are entered to control for differing working conditions. In particular, the percentage of staff who are minorities and institutional security level are considered. Camp examined the effects of being minority or working at different security levels in his analysis and found that they had no significant impact upon voluntary turnover at the individual level. However, given the importance of racial differences for many social processes and the real differences between facilities at different security levels, it seems prudent to control for these variables in this analysis.

The present study examines four years worth of data, 1989, 1990, 1991, and 1992. Data from 1988 are not included in this analysis as they are not as reliable as data for later years. The

data for 1992 were not available to Wright when he conducted his analysis and are added here to make the analysis as current as possible. Data from 1993, the last year for which results of the Prison Social Climate Survey are available, are not included because of a change in the measurement of the dependent variable. As noted previously, Wright examined the concurrent relationship between job separations and the work environment scales he included in his analysis. In contrast, this study looks at the relationships between the work environment scales (and the other control variables measured concurrently with the administration of the Prison Social Climate Survey) and the job separations that occur in the year *following* the collection of the work environment scales data. This allows for a proper causal ordering in the models examined. Sufficient time has not elapsed since the administration of the 1993 PSCS to collect relevant job separation data, and data for 1993 cannot be included.

As was appropriate in the macro level study of Wright, ordinary least squares regression techniques are used here to provide a first pass at analyzing the data. This allows for comparability of the findings reported here and those produced by Wright.

Regression Results for Job Separations

Descriptive statistics for the variables considered in the regression and tree models are presented in Table 1. One of the most notable findings is the decline in the separation rate. In 1989, the average separation rate for all facilities comprising the BOP was 8.6%.³ By 1992, the

³As previously discussed, the data on job separations are collected for the 12 months following the administration of the Prison Social Climate Survey. So, for example, Table 1 reports a separation rate for all staff of 8.6% in 1989. Actually, the rate of 8.6% refers to the time period of December 1989 to November 1990. To retain simplicity in the presentation, the dates used in the tables refer to the year in which the PSCS was administered, not the year in which the job

average separation rate for BOP facilities had fallen by over 30% to 6.0%. The variation around the mean is also tighter as reflected in smaller standard deviations for 1991 and 1992. An almost identical change is reflected in the separation rate for staff with up to 9 years of BOP tenure.⁴ The 1992 voluntary turnover rate of 4.9% is only 69% of the 1989 level of 7.1%. Again, there is less variation about the mean in 1991 and 1992.

The results in Table 1 show that staff at the average BOP institution provide favorable ratings of job satisfaction and BOP commitment as over 70% of staff give favorable ratings of these measures. There was a small decline between 1989 and 1992 for job satisfaction but nothing on the order of the 30% drop for total job separations and voluntary turnover. Over half, in fact, up to 64% of the staff at the average BOP institution also indicate favorable ratings for institutional commitment and efficacy in dealing with inmates.

The average BOP facility is composed of around 25% female staff and 30% nonwhite staff between 1989 and 1992. The average median age stays around 34 years, and the average median tenure of staff at the typical facility is between 44 and 48 months.

The results of models by year which include only the variables analyzed by Wright (1993) are provided in Table 2. Wright found only that institutional commitment had a consistently significant effect on job separations. The percent of staff reporting favorable institutional commitment was found to exert a negative influence on the institutional separation rate. Efficacy in dealing with inmates did not exert a significant effect in any year, and job satisfaction was found

separations occurred.

⁴For simplicity, we refer to the separation rate for staff with up to 9 years of BOP the separation rate for voluntary turnover. Strictly speaking, this is only an approximation of the voluntary turnover rate.

to exert a significant effect only in 1988 in the Wright study. The effect of job satisfaction in the Wright study was for institutions with higher numbers of staff reporting job satisfaction to have lower separation rates in 1988.

The results in Table 2 show that the coefficients for institutional commitment are consistently negative for models of job separation and voluntary turnover.⁵ However, the effects of institutional commitment on job separation and voluntary turnover are not significant in 1992. This means that institutions with higher percentages of staff giving favorable evaluations of institutional commitment in 1989, 1990, and 1991 have significantly lower job separation and voluntary turnover rates. These findings are consistent with the results reported by Wright and Camp, with the exception of the nonsignificance in 1992.

The coefficients reported for job satisfaction and efficacy in dealing with inmates are not consistent with the findings reported by Wright and Camp. Table 2 shows that the effect of job satisfaction is significant for all years except 1992. Neither Wright nor Camp found a significant effect for job satisfaction with the exception of Wright finding an effect in 1988. However, the positive sign of the effect in 1989 and 1990 is unexpected. In 1989 and 1990, institutions with

⁵The dependent variables in all of the models produced for this analysis are modified by the logit transformation. The regression coefficients reported for the independent variables measure the effect on the logit, or the logarithm of the odds ratio of the dependent variable. A more meaningful interpretation is easily derived by taking the antilogarithm of the regression coefficients and multiplying by 100. This gives the effect of the independent variable on the odds ratio. For example, the effect of institutional commitment on the voluntary turnover rate in 1989 is reported in Table 2 as -0.0241. The antilogarithm of the coefficient times 100 is 97.6. This means that as the percentage of staff giving favorable evaluations of institutional commitment increases by one unit (all other effects being held constant), the odds of the voluntary turnover rate is only 97.6% of what it would be otherwise.

The present study is most interested in the sign and significance of the effects of the independent variables on job separation and voluntary turnover rates. Therefore, the effects of the independent variables on the odds ratio are not needed or computed for any of the tables included.

higher numbers of staff giving favorable evaluations of job satisfaction had *higher* job separation and voluntary turnover rates. In 1991, this relationship reversed, and institutions with higher levels of staff giving favorable evaluations of job satisfaction had lower rates of job separation and voluntary turnover.

Neither Camp nor Wright found an effect for efficacy of staff in dealing with inmates. The results in Table 2, though, suggest a positive effect between the percentage of staff giving a favorable evaluation of efficacy in dealing with inmates and job separation rates. In 1991, efficacy has a significant, positive effect on job separations, and it has a positive, significant effect on voluntary turnover in both 1991 and 1992. The results for 1992, however, are clearly aberrant of previous trends and need further examination.

The results for the parsimonious models first suggested by Wright and reanalyzed here suggest several things. First, it does not appear to make much difference in terms of the effects of the independent variables as to whether job separation or voluntary turnover rates are examined. Second, the change in the sign for job satisfaction in 1991 suggests that there may be a problem of model specification. Finally, the lack of significance of institutional commitment in 1992—an otherwise significant, negative predictor of job separation and voluntary turnover—suggests that something different may have been going on in 1992.

The results reported in Table 3 for equations modeled along the lines suggested by Camp (1994) is an attempt to address the issue of model specification. The equations for the different years include additional variables for BOP commitment, percentage female, percentage nonwhite, median age, median BOP tenure, and security level.

The results for the equations presented in Table 3 do not clear up the problems noted for the effects of institutional commitment, job satisfaction, and efficacy reported in Table 2. As in the reduced form models, job satisfaction has a positive and significant effect on job separations and voluntary turnover in 1989 and 1990 in the full models reported in Table 3. In 1991, the effect of job satisfaction reverses and becomes negative. In 1992, the effect of job satisfaction is not significant. The effects of institutional commitment are once again consistently negative, but the effects of institutional commitment on job separations and voluntary turnover are only significant in 1989 and 1990. Also, as with the reduced form models, efficacy in dealing with inmates exerts a positive, significant effect on job separation and voluntary turnover in 1991. In short, the sign and significance of the relationships between the variables examined by Wright—job satisfaction, institutional commitment, and efficacy in dealing with inmates—are consistent across the full and reduced forms of the models considered here.

Contrary to the findings reported by Camp for individual level analysis, the effects of commitment to the BOP on institutional job separation and voluntary turnover rates are nonsignificant in all of the years examined. None of the other three variables found to be important in the Camp study—age, sex, and tenure—are shown to exert a consistent, significant effect across all four years examined. Age and tenure have a significant effect only in 1989. Institutions with a higher average median age in 1989 have higher rates of job separation and voluntary turnover. On the other hand, institutions where the staff have a higher median number of months of BOP tenure in 1989 are significantly less likely to have high rates of job separation and voluntary turnover. The percentage of staff being female is significantly related to the voluntary turnover rate only in 1992. As in the reduced form model, the results for 1992 do not

coincide with fairly consistent results produced in previous years.

The other two variables included in the full model specification, percentage of staff who are nonwhite and security level, are not generally significant. In none of the models does the percentage of staff who are nonwhite assume importance. The indicator for administrative security level is significant in a couple of the models, but the effects of security level are generally not important.

In short, even in the full models, it appears that there may be a problem with proper model specification. Especially troubling are: 1) the significant, positive effects of job satisfaction on job separation and voluntary turnover rates in 1989 and 1990; 2) the reversal of the effects of job satisfaction in 1991; and 3) the generally nonsignificant effects of any of the work environment measures in 1992. One possibility is that the measures are not reliable and/or valid measures. However, this is contrary to confirmatory factor analyses conducted by William G. Saylor, Deputy Chief of Research, that demonstrates great stability in the validity and reliability of the measures. As such, model specification is the likely culprit in the somewhat puzzling results reported here.

It is also possible that measurement error in the dependent variable accounts for part of the problems encountered here. The analyses provided for the job separation rate—all job separations—and the voluntary turnover rate—separations of individuals with up to 9 years of BOP tenure—do not substantially differ. It is possible that the approximation of the voluntary turnover rate does not accurately capture the true voluntary turnover rate examined by Camp (1994).

The data at hand do not allow clearer specification of the voluntary turnover rate. So,

model specification is the main option to pursue. As noted previously, the literature on voluntary turnover and job separations is geared toward individual level analyses. There is less to guide analyses of institutional, or macro-level analyses except to assume that individual level processes operate at the aggregate level as well. That has been the approach taken here. There are obvious differences between the findings reported by Camp (1994) and those reported here. This may suggest that the effects of the variables examined are not complementary at the individual- and macro-levels. A more likely alternative is that there is insufficient statistical power to uncover weak effects that exist at both levels.

Discussion

The results presented for the linear regression models are not conducive to making simple generalizations about the effects of the work environment scales on job separations and voluntary turnover at the institutional level. The results are certainly not as clear as the results presented previously by Wright (1993) and Camp (1994). Relationships found by Camp (1994) to exist at the individual level do not aggregate in a simple manner to the macro level. There are several possible reasons for this state of affairs. The most obvious reason is that the rates of voluntary turnover and job separations are not sufficiently numerous to aggregate and capture what are relatively weak, but statistically and substantively significant effects at the individual level.

While these results are not clear about the effects of the work environment scales at an aggregated level considered alone, they do not necessarily address the more interesting aspects of aggregate effects anyway. Theoretically, the more interesting effects at the aggregate level are contextual effects. In other words, do aggregate measures capture the effects of organizational

climate that act in some way independently of individual level effects? This is by far the more interesting sociological question.

The current research does not use an adequate database to address the contextual effects of the work environment scales. It does not contain any information at the individual level. However, databases can be constructed from the data collected by the Office of Research and Evaluation to merge the individual and macro level data. With such a database, it is possible to address the effects of contextual and individual level effects of the work environment scales on voluntary turnover. One side benefit of such a database is that it is possible to directly determine whether the source of turnover is voluntary, involuntary, or retirement. Statistical models that are relatively new to the social sciences, hierarchical linear models (HLM), are specifically geared toward analyzing such data (Bryk and Raudenbush 1992).

An example of a type of hypothesis that could be tested with such a database and using HLM techniques is the individual and contextual level effects of institutional commitment. We know from Camp (1994) that higher levels of institutional commitment are associated with a lower likelihood of turnover at the individual level. But what about the effect of contextual effects of institutional commitment, or the general level of institutional commitment among an employee's colleagues? All sociological theory points to the importance of group pressure upon social behavior, and even the decision to terminate employment has social consequences and antecedents. How are the changes of voluntary turnover affected when workers have similar levels of institutional commitment but work in facilities with different contextual values of institutional commitment? How about instances where an individual level of institutional commitment is either noticeably higher or lower than the level of institutional commitment among

one's coworkers? Does this generate greater pressure toward turnover or remaining with the organization? Again, these are the types of research questions we want to address, and clearly it is necessary to move beyond the research presented here, by Wright (1993), and by Camp (1994). As such, the present research is certainly not the last word.

Conclusions

There is a strong tendency in social science research to report only research that supports one's prior expectations. This is usually unfortunate. The present research does not lend itself to simple generalizations about the effects of work environment measures. This is probably due to some combination of measurement error, model misspecification, lack of statistical power, and lack of theoretical guidance. However, the present research does point out that we cannot simply assume that relationships found at the individual level simply and directly aggregate to macro level effects.

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Table 1
Mean Values (Standard Deviations) of the Variables Analyzed

Explanatory Variables	1989	1990	1991	1992
Separation Rate of All Staff	8.6 (3.6)	8.0 (3.5)	6.4 (2.2)	6.0 (2.8)
Separation Rate of Staff with 9 or Fewer Years of Tenure (%)	7.1 (3.5)	7.1 (3.6)	5.6 (2.2)	4.9 (2.6)
Job Satisfaction [†]	72.3 (9.1)	71.2 (9.7)	70.5 (6.7)	70.4 (6.4)
Institutional Commitment [†]	55.5 (13.1)	54.6 (15.0)	55.2 (13.2)	54.6 (12.9)
Efficacy Dealing with Inmates [†]	60.4 (10.2)	63.8 (10.1)	63.0 (8.6)	64.0 (8.5)
BOP Commitment [†]	75.7 (9.1)	74.9 (11.1)	76.1 (9.0)	76.8 (7.8)
Percentage Female	23.9 (8.9)	25.0 (8.8)	26.3 (8.9)	26.5 (8.8)
Percentage Nonwhite	29.0 (19.6)	29.5 (19.3)	30.3 (19.7)	29.8 (19.4)
Median Age (years)	34.5 (1.5)	34.1 (1.4)	34.0 (1.4)	34.4 (1.5)
Median BOP Tenure (months)	47.9 (20.3)	44.2 (17.0)	43.8 (16.4)	48.2 (14.3)

[†]Percent of staff giving favorable responses. See Appendix 1 for definition of a favorable response.

Table 2
Linear Regression Models of Institutional Separation Rates, Reduced Model

Explanatory Variables	1989	1990	1991	1992
<i>Job Separations—Separation Rate of All Staff</i>				
Intercept	-2.2506	-2.5915	-1.8817	-2.8688
Job Satisfaction	0.0193**	0.0158**	-0.0187**	0.0001
Institutional Commitment	-0.0196**	-0.0161**	-0.0074**	-0.0057
Efficacy Dealing with Inmates	-0.0065	-0.0007	0.0164**	0.0080
F	6.811**	11.460**	9.126**	1.233
R ²	27.5%	36.4%	31.0%	5.8%
N	58	64	65	64
<i>Voluntary Turnover—Separation Rate of Staff with Tenure Less Than or Equal to 9 Years</i>				
Intercept	-2.6691	-2.8523	-2.0006	-3.0319
Job Satisfaction	0.0219**	0.0139*	-0.0179**	-0.0068
Institutional Commitment	-0.0241**	-0.0159**	-0.0101**	-0.0074
Efficacy Dealing with Inmates	-0.0018	0.0033	0.0177**	0.0164*
F	9.254**	9.609**	9.632**	2.143
R ²	34.0%	32.5%	32.1%	9.7%
N	58	64	65	64

**p < .01

*p < .05

Table 3
Linear Regression Models of Institutional Separation Rates, Full Model

Explanatory Variables	1989	1990	1991	1992
<i>Job Separations—Separation Rate of All Staff</i>				
Intercept	-9.7336	-4.9155	-0.5347	0.4490
Job Satisfaction	0.0303**	0.0171**	-0.0195*	0.0111
Institutional Commitment	-0.0143*	-0.0192**	-0.0022	0.0059
Efficacy Dealing with Inmates	-0.0019	-0.0072	0.0137**	-0.0044
BOP Commitment	-0.0108	0.0040	-0.0013	-0.0176
Percentage Female	-0.0032	0.0031	0.0091	0.0138
Percentage Nonwhite	0.0015	-0.0046	-0.0011	0.0051
Median Age	0.2198**	0.0832	-0.0376	-0.0924
Median BOP Tenure	-0.0132*	-0.0070	-0.0046	0.0017
Administrative Security	0.2467	0.2457*	-0.0181	0.0495
High Security	-0.0331	-0.2275	0.0874	-0.0526
Medium Security	0.1025	-0.0751	-0.0435	0.0408
Low Security	-0.1158	-0.0121	0.1050	0.0603
Minimum Security	-0.2003	0.0690	0.1308	-0.0980
F	3.274**	3.749**	3.438**	1.432
R ²	46.6%	46.9%	44.2%	25.2%
N	58	64	65	64
<i>Voluntary Turnover—Separation Rate of Staff with Tenure Less Than or Equal to 9 Years</i>				
Intercept	-8.5791	-4.4228	0.4204	1.5660
Job Satisfaction	0.0286**	0.0151*	-0.0179*	0.0040
Institutional Commitment	-0.0162*	-0.0181**	-0.0023	0.0075
Efficacy Dealing with Inmates	-0.0004	-0.0048	0.0140**	-0.0057
BOP Commitment	-0.0079	0.0039	-0.0022	-0.0128
Percentage Female	-0.0077	0.0039	0.0057	0.0211*
Percentage Nonwhite	0.0000	-0.0052	-0.0020	0.0046
Median Age	0.1844*	0.0657	-0.0671	-0.01273
Median BOP Tenure	-0.0154*	-0.0088	-0.0057	-0.0017
Administrative Security Level	0.3461*	0.2540*	0.0650	0.1011
High Security	-0.2261	-0.2368	-0.1062	0.0127
Medium Security	0.1356	-0.0915	-0.0032	0.0656
Low Security	-0.1204	0.0000	0.1459	-0.0075
Minimum Security	-0.1352	0.0743	-0.1015	-0.1719
F	4.108**	3.450**	5.359**	2.344*
R ²	52.3%	44.8%	55.3%	35.6%
N	58	64	65	64

**p < .01

*p < .05