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Investing in people: salary and turnover in policing

Historically, policing has been a blue-collar occupation with relatively low salaries (Stoddard, 1968). However, over the last half century, officer salaries in the United States have increased due in large part to the proliferation of labor unions that have successfully argued that police are underpaid and that the increasing complexity of police work should result in greater compensation (Kadleck, 2003). The reasoning behind this is that salary is an important part of the incentive system used by an organization to motivate employees to comply with agency rules and regulations (Mueller and Price, 1990). Salary is strongly related to job performance and effort, as well as morale and job satisfaction (Crow et al., 2012; Folger and Cropanzano, 1998; Lambert et al., 2007). From an organizational standpoint, salary is also a means of encouraging employee retention, affecting the desirability of leaving and subsequent turnover behavior (e.g., Lum et al., 1998).

In policing, research on the relationship between salary and turnover is limited. We know that salary and benefits vary greatly across agencies and that about 10.8% of municipal, county, and state officers turn over every year (Wareham et al., 2015). Although there is consensus that salary affects an individual's decision to pursue a career in law enforcement, as well as his or her decision to continue working for a particular organization, experts disagree on the overall importance of compensation relative to other factors. This study is the first step toward evaluating the influence of salary on turnover in law enforcement. Using data from more than 2200 agencies, we tested hypotheses about the effect of pay and other economic incentives on voluntary and involuntary separations. In addition to contributing to the theoretical literature on the antecedents of turnover, examining the effects of salary on voluntary and involuntary separations has practical implications by helping officials estimate how changes in the compensation structure may affect important organizational outcomes. Current budgetary restrictions coupled with turnover make it increasingly difficult for police agencies to maintain strong police rosters, as officers are leaving police service

early (Orrick, 2008). Maintaining strong police rosters is increasingly important as agencies rely on officers to accomplish the mission of police work, making sworn police officers a valuable and expensive resource for American police agencies (Kiebusch et al., 2003).

Literature Review and Background

In the field of human resource management, turnover is usually defined as the number of employees or the percentage of the workforce who leave the organization over a specific duration of time, such as a 12-month period (Mathis et al., 2016). There are different reasons for employee turnover, and as a consequence, personnel departures are often categorized into types such as retirements, voluntary separations, layoffs, medical discharges, and firings. Some turnover is good for an organization. Positive turnover, referred to as functional turnover, is often necessary and helps to maintain a healthy, productive, and modern organization. Functional turnover can benefit the agency by removing poor-performing employees, facilitating cultural changes, infusing the organization with new ideas, and reducing personnel costs (Abelson and Baysinger, 1984; Dalton et al., 1982). In contrast, negative or dysfunctional turnover is when good-performing employees leave.

At a practical level, dysfunctional turnover represents a major problem for law enforcement, especially regarding the economic costs of recruiting, screening, and training replacement officers (Orrick, 2008; Wilson et al., 2010). Although the data on the actual costs of replacing officers is limited, experts suggest that the expenditures are significantly higher for law enforcement compared to other types of agencies (Koper et al., 2002). At the low end, Harris and Baldwin (1999) estimated that in 1999 it cost about \$14,300 to replace a single officer (adjusting for inflation, that figure would be about \$20,690 in 2016). At the high end, Frost (2006) estimated that in 2003 it cost about \$100,000 to train an officer in Los Angeles and about \$250,000 to hire and train a law enforcement official for the U.S. government (\$130,999 and \$327,497, respectively, in 2016 adjusted for inflation). A more typical estimate comes from Copeland (2009) who calculated that the average cost of

selecting, hiring, and training a new officer was about \$59,000 (\$66,288 in 2016 adjusted for inflation; cited by Wilson et al., 2010).

In addition to the direct financial costs, productivity costs and organizational continuity costs are associated with high dysfunctional turnover. Research suggests that officer success is a function of experience and the ability to make good decisions with little oversight from supervisors (Gottfredson and Gottfredson, 1988). High dysfunctional turnover reduces the number of experienced officers, and thus, reduces the organization's capacity for good decision-making. Further, turnover can potentially reduce unit cohesion and morale (Drew et al., 2008; Kieckbusch et al., 2003).

A number of theoretical models have been developed to explain dysfunctional turnover in policing. In general, these models operationalize personnel departures as a multistage process that includes attitudinal and behavioral components that are influenced by individual characteristics, work-related factors, and economic opportunities outside the organization (for example, see the Mobley et al., 1979 model). Most of the current literature on policing focuses on job satisfaction and organizational commitment, and studying which factors are related to negative experiences in the profession, such as stress, traumatic events, emotional exhaustion, and burnout (Adams and Buck, 2010; Matz et al., 2014), difficulty adjusting during the occupational socialization process, and acclimatizing to life as an officer (Fielding and Fielding, 1987; Haarr, 2005), the lack of accommodations for family obligations (Rabe-Hemp and Humiston, 2014; Schulze 2010), the exclusion of individuals, such as women and people of color, from fully participating in the organization because of prejudice or discrimination (Brough and Frame, 2004; Haarr, 2005; Holdaway and Barron, 1997; Gachter et al., 2013), and working conditions inside the agency, including organizational policies and support from supervisors and peers (Allisey et al., 2014; Cooper and Ingram, 2004; Tipton, 2002).

Regarding salary specifically, the theoretical relationship between pay and turnover can be explained using concepts from equity theory (Adams, 1963). Equity theory focuses on understanding how an employee's beliefs regarding how he or she is treated relative to others in the organization affect his or her behavior. In theory, an employee brings inputs to his or her job, such as education, experience, time, and effort, and in return, the individual receives outcomes such as pay, promotions, and recognition. The theory holds that an employee's perception of equity is a function of his or her beliefs of the appropriateness of the ratio of inputs to outcomes. Research suggests that feelings of inequity are strongly associated with a lack of motivation, absenteeism, lower job performance, and general dissatisfaction with his or her employment (Crow et al., 2012; Folger and Cropanzano, 1998; Lambert et al., 2007).

Many believe that compensation has a strong effect on recruiting and retaining highly qualified law enforcement personnel. For example, in a study of 851 police recruits in California, 77% somewhat or strongly agreed that they had accepted employment with the agency because of salary and benefits (California Commission on Peace Officer Standards and Training, 2006). In a different study of sheriff's deputies in North Carolina, issues regarding salary and the structure of benefits were the most frequently cited recommendation for improving retention (Yearwood, 2003). McIntyre and colleagues (1990) gave Vermont officers a list of 32 reasons for leaving and asked the officers to rate how important each factor was in their decision to leave. Sixty-nine percent rated "to attain a better salary" as somewhat or very important, compared to 25% for job stress and 51% because of a dislike of personnel policies (McIntyre et al., 1990, p. 10). Although salary and benefits were not directly related to leaving in a sample of officers from Alaska, collecting food stamps while employed by the agency was significantly related to attrition (Wood, 2002).

Ramshaw (2013) argued that these issues are especially salient during periods of structural and operational change in organizations, such as the adoption of a new policing modality or

accountability measure. This is, of course, a double-edged sword. On one hand, a new policing modality like community policing may enable officers to improve their status and job satisfaction by moving around the department which may be a more readily available option than promotion up the ranks (Cooper and Ingram, 2004). On the other hand, resistance from employees is to be expected when any form of organizational change is introduced that alters their working practices. For example, new police accountability measures, such as body-worn cameras, have been met with some resistance (Farmer, 2016).

Although there are strong commonsense beliefs that salary is an important factor in dysfunctional turnover, in general, the current empirical evidence is weak and relies on studies with significant methodological limitations, such as studying intentions to leave rather than behaviors and drawing data from a small sample or geographically limited area. Further, many experts argue that other factors are more important than salary for retention of qualified officers, such as access to modern equipment, adequate training, career advancement, and economic incentive opportunities (James and Hendry, 1991). For example, James and Hendry (1991) contended that there are organizational factors, such as union representation, economic incentives, and policing styles, and community factors, such as crime rates, that influence an employee's decision to leave a police organization. The idea is that organizational and community variables that bring about strain are positively associated with voluntary turnover, whereas organizational and community variables that improve the quality of life for the officers are negatively associated with voluntary turnover. Smith, et al. (2014) tested the relationship between these factors and turnover and found mixed support for their influence. Interestingly, their results suggested that turnover was strongly related to agency size, and the authors cautioned researchers to explore size, as well as organizational factors, in future analyses.

Other experts argue that traditional turnover research may not fully explain the experiences of female officers and officers of color. For example, Reskin et al. (1999) argued that the race and sex composition of an establishment affects turnover. Torre (2014) examined the determinants of women's exits from male-dominated occupations, focusing on the effect of previous occupational trajectories, and found that women's experiences uniquely impact the likelihood of women leaving male-dominated occupations, like policing. Finally, Matz et al. (2014) argued that the research on turnover is mostly mixed and lacking in consensus related to the impact of gender and race (i.e., diversity). In conclusion, this project is an attempt to provide a more comprehensive answer to the question of whether salary matters in explaining voluntary turnover and dismissals in American police agencies, controlling for other theoretically important explanations such as agency size, diversity, and economic and community incentives.

Data and Methods

Data

The data for this study was gathered from three sources. Information on salary and other organizational characteristics was taken from the 2013 Law Enforcement Management and Administrative Statistics (LEMAS) survey (U.S. Department of Justice, 2015). Data on the crime rate was gathered from the 2012 Uniform Crime Reporting (UCR) Program (U.S. Department of Justice, 2014), and information on the community was collected from the 2013 American Community Survey (ACS) 5-year estimates (Minnesota Population Center, n.d.).

Measures

The hypotheses were evaluated using two different measures of employee turnover. The first measure, voluntary separations, is defined as the number of full-time sworn officers who voluntarily resigned from the agency during the 12-month period ending December 31, 2012. The second measure, dismissals, is defined as the number of full-time sworn officers who were fired by the

agency or had their employment terminated during the 12-month period ending in 2012. The descriptive statistics are presented in Table 1.

– Insert Table 1 about here –

Adjusted officer salary was calculated by employing a two-step process. First, using the LEMAS data, officer salary was computed by averaging the reported minimum and maximum annual salaries for a full-time sworn entry-level officer post-academy training. Next, the median salary (adjusted for 2013 by the U.S. Census Bureau) for the community was gathered from the ACS data and matched to the respective agency using Census place codes (n=1437) or county codes if place information was not available (n=802). Finally, the adjusted salary was calculated by taking the officer salary measure from the LEMAS survey and dividing the measure by the median salary from the ACS and then multiplying by 100.

To account for economic incentives in policing not directly tied to salary, but which have the potential to impact turnover decisions, three other economic measures were included in the analyses. The economic incentives measure is a count of the number incentives, in terms of either salary or paid leave, for special skills or performance, such as educational advancement, bilingual abilities, special duty assignments, or merit. The measure ranges from zero to nine with higher values indicating more economic incentives available to law enforcement personnel. Defined benefits plan measures whether the agency makes a defined benefit retirement plan available to employees (coded 0=no and 1=yes; 91% of agencies reported having a plan). Work outside agency measures whether the department allows full-time sworn officers to work outside the organization (coded 0=no and 1=yes; 88% of agencies reported allowing officers to work outside the department).

Previous research has established that the type and size of the agency are associated with officer turnover (Wareham et al., 2015). For this reason, the size of the workforce was defined as the number of full-time sworn officers in the organization as of January 1, 2013, population was defined

as the number of residents an agency serves, and the sheriff's office variable indicates whether the agency is a local police department or a sheriff's office (coded 0=police and 1=sheriff; 25% were sheriff's offices). Collective bargaining measures indicated whether sworn personnel were represented by a collective bargaining organization (coded 0=no and 1=yes; 85% reported having the right to collective bargaining). Body-worn cameras indicated whether the agency uses video cameras on patrol officers (coded 0=no and 1=yes; 27% reported using a video camera). The level of community and problem-oriented policing was measured using six items. Representatives of the department were asked to indicate yes or no (coded 0=no and 1=yes) for each of the following items: The department has a mission statement with a community policing component, patrol officers engage in Scanning, Analysis, Response and Researching (SARA) type problem solving, the agency has problem-solving partnerships with other groups in the community, the department surveyed local residents, problem-solving is included in the evaluation criteria for patrol officers, and officers are assigned to areas or beats. The community and problem-orientated policing measure was calculated by summing the six items, and higher values indicate greater implementation.

The percentages of full-time sworn officers who were female, Black, and Hispanic were also included to account for the demographic composition of the workforce. Information on the crime rate (per 100,000 population) was taken from the UCR data set and includes all seven type I offenses. The number of assaults on officers was taken from the UCR data set and combined with the LEMAS data to calculate the assault on officers' rate (per 1000 officers). The percentage of community residents in poverty, the percentage unemployed, the percentage receiving public assistance, the percentage living in owner-occupied housing, and the percentage of female-headed households with children were collected from the ACS survey. Together, these measures indicate communities with higher economic disadvantage and less informal social control (Sampson et al., 1997). Principal components factor analysis with varimax rotation was conducted with the

community measures and returned a one-factor solution that accounted for 59% of the variance (factor loadings were as follows: poverty .837, unemployment .771, public assistance .658, female-headed families .825, and owner-occupied housing -.731).

Finally, because prior research suggests that there are significant differences in turnover across the United States, particularly regarding agencies in the South (Wareham et al., 2015), we coded the geographic region of the agency following the U.S. Census Bureau (2002) classifications. Scholarship suggests that the Southern region has developed a collective identity which is unique from the rest of the United States – one which is heavily influenced by historical events (i.e., strong support for States rights, the use of slave labor, and the legacy of the Civil War), as well as, demographic and social trends (i.e., large Black populations, contains some of the fastest growing areas, has the highest church attendance, predominately conservative and more support for Republican Party) (Cooper and Gibbs, 2010). About 18% of the agencies were in the Northeast, 27% in the Midwest, 16% in the West and 39% in the South. The Southern region measure was used as the comparison category.

Data Analysis Technique

When ordinal least squares (OLS) regression is used to analyze count data that displays a significant amount of positive skewness, the model often produces residuals that violate the assumptions of constant variance (homoscedasticity) and the normal conditional distribution of means (normality). Violating these assumptions may lead to inefficiencies and biased standard errors and tests of statistical significance (Allison, 2012). As a consequence, the actual Type 1 error rate may not be the same as the stated Type 1 error rate, and there may not be adequate statistical power to detect true effects.

As an alternative to OLS regression, we used Poisson regression to evaluate the effect of salary on voluntary and involuntary turnover. Poisson regression allows us to linearize any

potentially nonlinear relationships between the turnover measures and the independent predictor variables, as well as correctly model the distribution of the error term. The model was estimated in Stata 14.1 (StataCorp, 2015). Because turnover is hypothesized to be related to the size of the workforce, we used the number of full-time sworn officers in the agency (size) as the exposure variable to adjust for differences between organizations regarding the risk of employee turnover.

Using Poisson regression, we model the log of the expected count of the number of employees that left the agency as a function of the independent variables. The coefficients produced in the model are interpreted as: for every one unit change in the independent variable, the coefficient is the expected change in the difference in the logs of expected counts, given the other variables in the model are held constant. Because Poisson regression coefficients are difficult to interpret, researchers often use incident rate ratios (IRR) to describe the effect of independent variables on a count dependent variable. The IRR is a relative measure used to compare the number of events over a specific period; however, in this case the exposure variable is the size so is relative to the number of employees in the agency. The IRR is interpreted as: for every one unit change in the independent variable, the incident rate for turnover would be expected to change by a factor of the IRR value, given all other variables in the model are held constant. The IRR can also be expressed as a percentage with values over one being the percent increase and values less than one indicating a percentage decrease. Different values of the independent variable can be used to estimate effects. For example, two standard deviations from the mean represents about 95% of a distribution, and thus, makes a good comparison between organizations at different ends of a distribution.

Although Poisson regression does not have an equivalent to the R^2 statistic calculated from OLS regression, we can compute McFadden's pseudo R^2 . McFadden's pseudo R^2 is calculated as one minus the log likelihood value for the model with predictors divided by the log likelihood value for the model without predictors and represents the level of improvement in the model (Allison, 2012).

In general, McFadden's pseudo R^2 value was lower than an R^2 produced from an OLS regression and models (Smith and McKenna, 2013).

Before estimating the models, we evaluated the data for problems following the procedures outlined by Tabachnick and Fidell (2005). Because multicollinearity focuses on the relationships between the independent variables the simplest way to examine the data is to look at bivariate correlations and variance inflation factors (VIFs) produced from a linear regression model. In this case, none of the bivariate correlation exceeded the normally used criteria of .70 and the highest VIF produced in the two models was 2.24, well below the standard cutoff of 10. While there are no well-established criteria for evaluating the data regarding outliers in Poisson regression, we followed the procedures outlined by Fox (2008) to examine approximations of Cook's D values and concluded that no cases should be removed from the analyses. Because of skewness the measures for percent Black, percent Hispanic, the crime rate, the assault on officers' rate and the population variable were transformed using the natural log.

Results

Turnover

Regarding the 2239 agencies in this study, the average number of officers who voluntarily left the organization was 3.58 (with a standard deviation of 13.01), and the average number of officers who were terminated was 0.74 (with a standard deviation of 2.17). These figures translate into an average voluntary separation rate of about 5 officers (per 100) and a dismissal rate of about 1 officer (per 100). Approximately 40% of the agencies reported that no officers voluntarily separated, and about 71% reported that no officers were dismissed. In general, smaller organizations (fewer than 25 sworn officers) reported higher average separation rates and higher dismissal rates compared to medium-size departments (between 25 and 99 officers) and large agencies (100 or more officers) (average separation rate of 8.5 per 100 for small versus 3.4 per 100 for medium and 2.6 per 100 for

large; average dismissal rate of 1.4 per 100 for small, 0.9 per 100 for medium, and 0.6 per 100 for large).

Multivariate Models

The results for the multivariate model are presented in Table 2. The results suggest that higher levels of adjusted salary are significantly related to lower levels of voluntary separations and involuntary dismissals. For a one-unit change in adjusted salary, we would expect to see a -0.007 change in the log of the voluntary separation count and a -0.009 change in the log of the dismissal count. Another way to decipher these models is to use the incident rate (IRR), which is interpreted as the number of times or the percent change in the turnover measures for a one-unit change in adjusted salary. The findings from the model suggest an agency with an average salary that is two standard deviations below the adjusted mean salary for all agencies in the data set would have an estimated voluntary turnover rate 84% higher than an agency with an average salary that was two standard deviations above the mean. The model suggests that salary has an even stronger effect on dismissals. The results indicate that an agency with an average salary that is two standard deviations below the mean would have an estimated dismissal rate 108% higher than an agency that has an average salary that is two standard deviations above the mean for all agencies in the data set¹.

– Insert Table 2 about here –

Turning our attention to the other independent variables, consistent with prior arguments about compensation, salary is not the only important predictor of voluntary turnover. The number of additional economic incentives and participation in a defined benefits retirement plan were independently related to lower levels of voluntary turnover. In contrast, allowing officers to work outside the organization was not related to voluntary separations. None of the other three compensation measures—incentives, a defined benefits plan, or working outside the department—were significantly related to involuntary dismissals.

The findings suggest that there are regional differences in turnover with organizations operating in the Southern United States reporting the highest number of voluntary and involuntary separations. Further, agencies operating in more economically disadvantaged communities reported higher turnover compared to those operating in areas with greater economic prosperity. Consistent with prior research and the bivariate results, municipal police departments (compared to sheriff's offices) operating in larger communities reported fewer voluntary separations and dismissals than those operating in smaller communities².

The influence of the percentage of women, Blacks, and Hispanics in an agency on voluntary separations and involuntary dismissals produced mixed results. Greater percentages of women officers in an agency were related to higher rates of voluntary separations and involuntary dismissals. The percentages of Black officers and Hispanic officers were related to increased dismissals, but the greater Hispanic representation was related to a reduction in voluntary separation, and the Black officer representation was unrelated to voluntary separation. The finding that greater diversity was associated with greater involuntary dismissals deserves further exploration.

Interestingly, using body-worn cameras on patrol officers was associated with higher rates of voluntary turnover but not dismissals, and collective bargaining was associated with lower rates of voluntary turnover. Voluntary turnover was also related to the assault rate on officers, suggesting that individuals may be aware of the dangers of the occupation before joining the profession. McFadden's R^2 values are .268 for the voluntary separation model and .200 for the dismissals model³.

Discussion and Conclusion

The findings of this study contribute to our knowledge of the antecedents of voluntary separations and involuntary dismissals in law enforcement, particularly the role of salary. In theory, salary is important in understanding job satisfaction and organizational commitment (Matz et al.,

2012), as well as voluntary turnover and dismissals (Crow et al., 2012; Folger and Cropanzano, 1998; Lambert et al., 2007). These results confirm the importance of salary in understanding turnover in American police agencies. Specifically, the results show that higher levels of salary, relative to the community, are associated with lower levels of voluntary separations and involuntary dismissals. Keep in mind that in this study salary was measured relative to the community in which the agency resides. Officers likely define their salary and economic incentives relative to their community's quality of life or to the salary and benefits provided by police agencies nearby. In addition, turnover was measured by the number of officers who resigned or were fired rather than an officer's reported intent to leave. These improved measures may create a more realistic method of measuring the impact of salary on turnover.

Advocates of police professionalization believe that salary and economic incentives draw applicants with improved communication, problem-solving, and negotiation skills to the occupation of policing. In fact, increasing police officer salary was recently discussed as a possible solution for reducing conflict, restoring trust, and increasing perceptions of organizational legitimacy following a series of high-profile shootings, specifically of young men of color, which resulted in public consternation and calls for greater police accountability (for example, see The President's Task Force on 21st Century Policing, 2015). Underlying many of these reforms is the importance of recruiting and retaining high-quality officers who can effectively exercise discretion because it is believed to be a crucial factor in improving the relationship between law enforcement and communities of color. Economic incentives, as well as the opportunity to participate in a defined retirement plan, strengthen the conclusion that agencies that financially invest in police officers' salary reduce their turnover rate. Receiving incentives at work can increase a feeling of being valued and appreciated and subsequently reduce voluntary turnover. These incentives are necessary to make

police work competitive with other occupations, which are also actively recruiting from the same pool of qualified applicants.

Interestingly, another popular solution for increasing perceptions of organizational legitimacy, body-worn cameras, was related to voluntary separations. In other words, agencies that adopted body-worn cameras had higher rates of voluntary turnover than those that did not. This result may be indicative of resistance from officers in response to a top-down organizational change that altered their workday, and may dissipate over time. Initial police officer resistance to agency attempts at greater accountability is common (Walker, 2005). However, this may have implications for police morale. Interviews with police officers and administrators indicate an increased police fear of crime and low morale following the violent and tumultuous previous several years of police–citizen encounters (Wines and Robles, 2014; Wootson, 2016). Officers may be leaving agencies with increased accountability measures, as well as those perceived as producing dangerous or strained police–citizen encounters.

Research has shown that people who live in areas of concentrated disadvantage have more negative views of the police, which can result in poorer police–citizen interactions (Sampson and Jelgum-Bartusch, 1998; Dai and Johnson, 2009). In this study, although the crime rate was not significantly related to turnover, communities with higher economic disadvantage and less informal social control were related to higher rates of voluntary separations and involuntary dismissals. Working and living in a disadvantaged community may not only contribute to increased stress on the job but may also reduce the general quality of life for the officer and his or her family (Cao et al., 2012).

Perhaps even more important to police legitimacy, results from this study suggest that higher-than-average salaries also reduce dismissals. Dismissals can be costly to agencies in terms of public trust and legitimacy as police dismissals often start with a violation of that trust. One

explanation for these findings is that there is greater competition for positions for higher-salaried agencies that attracts a higher-quality applicant, reducing the need for dismissals. Another explanation is that agencies that invest in higher salaries also have early warning police accountability mechanisms that provide support to police in crisis, reducing the eventual need for dismissals (Walker, 2005). Finally, another alternative explanation is that low salaries are an indication of serious financial problems with the agency and may be associated with inadequate training and supervision of personnel.

Of course, not all police turnover is bad. Turnover that is necessary to facilitate change, to infuse the organization with new ideas, and to eliminate poor-performing employees is defined as functional or positive turnover. There is growing research (Schuck, 2014a; Schuck and Rabe-Hemp, 2014) that women, by their presence in police agencies, serve as change catalysts in organizations, destabilizing the existing police culture and resulting in agencies that are more open to change. The findings that women destabilize group solidarity within the agency and create an environment that is less resistant to change are supported by the findings of the current project that agencies with more female representation have greater turnover and dismissals.

It is important to note that in the field of organizational management, voluntary turnover (i.e., dysfunctional turnover where high-performing employees choose to leave) is generally conceptualized as theoretically distinct from involuntary turnover (i.e., functional turnover where poor performers are required to leave) (Dalton et al., 1982). Dismissals are typically seen as the result of hiring errors that police administrators correct by terminating employees who perform poorly, while quitting is viewed as a rational process where high-performing employees weigh the positive and negative aspects of their current jobs against the alternatives. Obviously, a hiring error may not be the only reason for an employee's poor performance; other factors such as alterations to the job itself (e.g., the adoption of a new policing philosophy, such as community policing) or the

introduction of a new accountability system (e.g., an advanced warning system or body worn cameras) may account for poor work performance, as well as changes in an employee's motivation and commitment to the organization. From this perspective, dysfunctional turnover undermines the organization more than functional turnover because of the assumption that high-performing employees are more likely to quit than poor performers.

While the above assumptions about the causes and consequences of the types of turnover are theoretically plausible, there is a limited amount of research on turnover itself, especially in policing, and several studies in organizational management have produced mixed findings (see Batt and Colvin, 2011). The results from this study suggest that other theories may help to explain the relationship between salary and turnover in policing. One possible explanation comes from transactional cost theory and the idea that strong bonds are created between the organization and its employees if the organization invests heavily in its employees (Guthrie, 2000). Such bonds reduce the likelihood that good employees leave and also decrease dismissals, because the organization is reluctant to dismiss employees due to the large investment that it makes in them. The mechanism regarding the relationship between salary and turnover is the same for voluntary and involuntary turnover; however, it functions differently at the employee level (i.e., it reduces quitting) and the organizational level (i.e., it reduces dismissals). Another possible explanation comes from the efficacy wage hypothesis, which states that premium wages and the threat of losing them incentivizes employees not to engage in unproductive behavior, or shirking, and thus reduces many of the disciplinary issues that lead to dismissals (Cappelli and Chauvin, 1991). From this perspective, higher relative pay motivates all employees, both the more competent and the less skilled, to stay in their current positions and not to engage in shirking, because their present jobs are more desirable than the alternatives. Drawing from the wage efficacy perspective, the mechanisms are hypothesized to be different for quitting (i.e., incentives) and dismissals (i.e., less shirking). Interestingly, other

economic incentives such as special-skills pay and a retirement plan are related to voluntary turnover but not to involuntary turnover. Competent employees may be more likely to consider the long-term benefits of employment than less adept employees. Furthermore, high-performing employees are probably more likely to earn special-skills pay bonuses than less skilled employees, and as such, the additional economic incentives related to education, language proficiency, special assignments, and merit are relevant factors in their decision-making processes, whereas for less skilled employees they are not. More research is needed into why, unlike in other types of companies, higher relative salaries are related to both quitting and dismissals in policing agencies. Testing the hypotheses of transactional cost theory and the efficacy wage hypothesis may be good starting points for assessing this difference.

Greater diversity in general, including Hispanic, Black, and female representation, was associated with greater dismissals. There are several explanations for these findings. One is that agencies with more diversity have been found to be more proactive in investigating citizen complaints (Schuck and Rabe-Hemp, 2014), illustrated by having a greater number of institutional rules and organizational structures in place to identify, collect, and manage information, at least regarding citizen complaints in use of force incidents. Another is that women and people of color are often excluded from fully participating in the organization because of prejudice or discrimination, leading to a lack of perceived support and eventual turnover (Brough and Frame, 2004; Haarr, 2005; Holdaway and Barron, 1997; Gachter et al., 2013). It is important to point out that with this data we cannot make inferences about individuals, and as such, we do not know the demographic characteristics of those who are being dismissed, only the characteristics of the agency.

In addition to the varying degrees of agency integration based on programming, agency size may also play a role in explaining these results as departments in larger jurisdictions are more diverse than those in smaller ones (Reaves, 2015). Further, the distribution of diversity is most likely not

random across agencies in the United States. For example, agencies in the Southwestern U.S. may have a greater percentage of Hispanic officers than departments in other areas of the country. Moving forward researchers should put more resources into studying the complex and possibility location specific effects of diversity on turnover in law enforcement.

Several agency characteristics were also important to understanding voluntary turnover and dismissals, largely confirming previous research. Specifically, the results confirm that urban municipal police agencies have fewer turnovers and dismissals than smaller police agencies and county agencies (Wareham et al., 2015). This is likely related to fewer opportunities for promotion, as well as lower salaries available in smaller, rural counties compared to larger municipal agencies. The reduction of turnover through collective bargaining was also confirmed in this research. Likely this is because having union representation increases officer pay as well as input into decision-making, both of which have previously been found to be negatively related to turnover (Holdaway and Baron, 1997). Finally, in keeping with prior research, police departments in the South, compared to those in the Northeast, Midwest, and West, had higher rates of voluntary and involuntary turnover (Wareham et al., 2015). Future research should start to make connections between agency characteristics and employee perceptions of the distributive and procedural justice of salary, as well as job satisfaction and organizational commitment, influence turnover, and dismissals. For example, future research needs to explore the relationships between distributive justice (such as burnout, stress, and job satisfaction) and procedural justice processes (such as access to promotion, coveted positions, and turnover decisions). In human resource management research, these areas have been shown to be important in understanding the intent to leave.

Like all research, this study is not without limitations. In this analysis, we focused on evaluating relationships at the organizational level, and as such, we did not examine individual-level reasons for officers leaving the agency or whether their departures were motivated by opportunities

within the profession (i.e., lateral moves to other local or federal law enforcement agencies). In addition, the quality of data produced through the LEMAS data collection system is not known, and most likely varies from agency to agency. Because we relied on a cross-sectional design, our ability to make causal inferences is limited, and the findings represent associations for only one point in time.

In conclusion, the results of this research suggest that when agencies make a significant economic investment in officer's salaries, relative to average salaries in the community, accompanied by economic incentives and retirement opportunities, voluntary separations and involuntary dismissals are reduced. Given the costs associated with police personnel, turnover is often reported by administrators as one of the greatest obstacles to accomplishing agency goals. Agencies that are under authorized strength must utilize overtime to maintain safety in their community. These costs coupled with the costs of replacing officers who voluntarily leave the agency mean that agencies are left with the option of investing in officers' salaries at the outset of their careers or in officer replacement much later. Future research should analyze the financial savings to agencies that invest in officer salaries to prevent turnover, keeping in mind that some turnover is necessary and important for agency growth.

Endnotes

¹ In order to be more confident in the findings, we evaluated the relationship between pay and turnover using several different operationalizations of salary. We estimated the models in Table 2 using the adjusted minimum salary for sworn full-time officers, the adjusted maximum salary, and the unadjusted average, minimum, and maximum salaries with the median income included as a control variable. All of the variations of the salary measure produced coefficients substantively similar to those reported in Table 2.

² Because of structural differences between police departments and sheriff's offices (Schuck, 2014b), the models in Table 2 were estimated separately. The findings suggest that salary is significantly related to voluntary turnover for police departments (coef.=-.005, *SE*=.001, χ^2 =-7.02, p <.001, *IRR*=.995, N =1674, McFadden's pseudo R^2 =.231) and sheriff's offices (coef.=-.014, *SE*=.001, χ^2 =-10.89, p <.001, *IRR*=.986, N =565, McFadden's pseudo R^2 =.350), as well as, involuntary turnover for police agencies (coef.=-.008, *SE*=.001, χ^2 =-5.09, p <.001, *IRR*=.992, N =1674, McFadden's pseudo R^2 =.187) and sheriff's units (coef.=-.012, *SE*=.003, χ^2 =-4.30, p <.001, *IRR*=.989, N =565, McFadden's pseudo R^2 =.200).

³ In the 2013 LEMAS survey, officials also collected information about the number of new hires with a college degree. Unfortunately, there appears to be a problem with the measure because about 5% of the agencies reported hiring more individuals with a college degree than they reported hiring in total. Further, the information is reported only for those agencies that hired in 2012, and thus, significantly restricts the sample and biases it toward larger agencies. In order to be more confident in the findings regarding the relationship between salary and turnover, we calculated the percent of sworn full-time officers who had been hired in the prior year (coding those who reported more hires

as 100%; $M=39.64$ $SD=37.51$, $N=1562$) and replicated the models presented in Table 2. The results for the relationship between adjusted salary and turnover were negative and statistically significant for voluntary separations (coef. $=-.003$, $SE=.001$, $z=-9.97$, $p<.001$, $IRR=.997$, $N=1562$, McFadden's pseudo $R^2=.282$) and dismissals (coef. $=-.012$, $SE=.002$, $z=-7.81$, $p<.001$, $IRR=.988$, $N=1562$, McFadden's pseudo $R^2=.203$).

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Table 1. Descriptive Statistics (N=2239)

| | Mean | Standard Deviation | Minimum | Maximum |
|----------------------------|--------|-----------------------|---------|----------|
| Voluntary separations | 3.58 | 13.01 | 0 | 474.00 |
| Dismissals | .74 | 2.17 | 0 | 38.00 |
| Size of workforce | 166.30 | 888.50 | 1.00 | 34454.00 |
| Adjusted salary | 96.30 | 30.27 | 22.11 | 248.90 |
| Economic incentives | 2.24 | 1.76 | 0 | 8.00 |
| Defined benefits plan | .91 | .28 | 0 | 1.00 |
| Work outside agency | .88 | .33 | 0 | 1.00 |
| Sherriff's office | .25 | .43 | 0 | 1.00 |
| Collective bargaining | .85 | .36 | 0 | 1.00 |
| Body-worn cameras | .27 | .45 | 0 | 1.00 |
| Community policing | 2.89 | 1.72 | 0 | 6.00 |
| % female | 9.46 | 7.79 | 0 | 53.90 |
| % Black (logged) | 1.16 | 1.20 | 0 | 4.54 |
| % Hispanic (logged) | 1.14 | 1.24 | 0 | 4.62 |
| Crime rate (logged) | 7.75 | .84 | 0 | 12.22 |
| Assaults officers (logged) | 1.66 | 2.29 | 0 | 7.60 |
| Population (logged) | 10.28 | 1.61 | 5.28 | 16.11 |
| Disorganization | <.01 | .98 | -2.59 | 4.32 |
| Northeast | .18 | .38 | 0 | 1 |
| Midwest | .27 | .44 | 0 | 1 |
| West | .16 | .37 | 0 | 1 |
| South | .39 | .49 | 0 | 1 |

Table 2. Poisson Regression Results for Officer Turnover (N=2239)

| | Voluntary Separations | | | Dismissals | | |
|----------------------------|------------------------------|------|-------------------------|------------------------------|------|-------------------------|
| | Coef. | SE | Incident Rate Ratios | Coef. | SE | Incident Rate Ratios |
| Adjusted salary | -.007*** | .001 | .993 | -.009*** | .001 | .991 |
| Economic incentives | -.048*** | .007 | .953 | -.010 | .016 | .990 |
| Defined benefits plan | -.148** | .046 | .862 | -.105 | .106 | .900 |
| Work outside agency | .023 | .046 | 1.023 | -.046 | .098 | .955 |
| Sherriff's office | .161*** | .033 | 1.175 | .664*** | .071 | 1.943 |
| Collective bargaining | -.139*** | .030 | .870 | -.054 | .066 | .947 |
| Body-worn cameras | .064* | .026 | 1.066 | -.015 | .058 | .985 |
| Community policing | .009 | .008 | 1.009 | .029 | .017 | 1.029 |
| % female | .025*** | .002 | 1.025 | .014*** | .004 | 1.014 |
| % Black (logged) | .015 | .015 | 1.015 | .095** | .032 | 1.099 |
| % Hispanic (logged) | -.048*** | .013 | .953 | .053* | .027 | 1.054 |
| Crime rate (logged) | -.042 | .027 | .959 | .095 | .061 | 1.100 |
| Assaults officers (logged) | -.010* | .005 | .990 | -.022 | .012 | .978 |
| Population (logged) | -.235*** | .010 | .790 | -.363*** | .020 | .695 |
| Disorganization | .192*** | .020 | 1.211 | .229*** | .045 | 1.258 |
| Northeast (vs. South) | -1.347*** | .057 | .260 | -.927*** | .112 | .396 |
| Midwest (vs. South) | -.272*** | .036 | .762 | -.704*** | .091 | .495 |
| West (vs. South) | -.177*** | .040 | .838 | -.213* | .087 | .808 |
| | Pseudo R ² = .268 | | | Pseudo R ² = .200 | | |

Note: Both models include size of the workforce as the exposure variable.