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Retaining the Thin Blue Line: What Shapes Workers' Willingness Not to Quit the Current Work Environment

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**Retaining the Thin Blue Line:
What Shapes Workers' Willingness Not
to Quit the Current Work Environment**

Working Paper No. 2009 - 28

Retaining the Thin Blue Line: What Shapes Workers' Willingness Not to Quit the Current Work Environment

Martin Gächter¹², David A. Savage³ and Benno Torgler³⁴⁵

Abstract: *The purpose of this study is to investigate the determinants of police officers' willingness to quit their current department. For this purpose, we work with US survey data that covers a large set of police officers of the Baltimore Police Department in Maryland. Our results indicate that more effective cooperation between units, a higher trust in the work partner, a higher level of interactional justice and a higher level of work-life-balance reduces police officers' willingness to quit the department substantially. On the other hand, higher physical and psychological stress and the experience of traumatic events are not, ceteris paribus, correlated with the willingness to leave the department. It might be that police officers accept stress as an acceptable factor in their job description.*

Keywords: Willingness to Quit the Job; Turnover Rates; Job Satisfaction; Stress; Police Officers; Work-Life Balance; Fairness; Acceptance.

JEL Codes: I10; I12; I31; J24; J81; Z130

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"If it falls to our luck to be street-sweepers, sweep the streets, like Raphael painted pictures, like Michelangelo carved marble, like Shakespeare wrote poetry, and like Beethoven composed music. Sweep the streets so well that all the hosts of heaven and earth would have to pause and sayHere lived a great street sweeper"

"Whatever your job might be, may you find satisfaction in doing it well!"

Rev. Dr. Martin Luther King Jr., (1965)

I. INTRODUCTION

Individuals spend a large amount of their life-time working and work plays a central role in today's society (see, e.g., Hochschild, 1997). Already Marx believed that the circumstances of work are the key sources of well- and ill-being (Lane, 1998). Keeping good workers and generating job satisfaction has become an important research in the last few decades across several fields of interest including psychology, economics, industrial relations, and management as it highly correlates with job performance and thus is a crucial factor to the success of a firm (Judge, Thoresen, Bono, & Patton, 2001). Given the challenging working environment and the nature of police work it is unsurprising that retaining officers within the service over the longer term is of great importance to many police departments. Law enforcement agents are also working in strategically important work environments that are not only characterized as physically and emotionally demanding, but also as an essential part for a well-functioning society due to the fact that inefficiencies in the police force can induce large negative externalities. Retention of experienced officers is vital to maximising performance and outcomes in police work as well as lowering the cost of training and recruitment. Research suggests that

the low retention rates are in part due to low levels of job satisfaction (Freeman, 1978). The problem of attracting and training new officers is made more difficult when the perception of job satisfaction within the police force is low. The advantages of retaining experienced officers are two-fold: it is costly and time consuming to recruit new officers; and when older officers leave they take a large amount of job related human capital with them.

However, even with a plethora of new research, relatively little specific investigation has been done on the *willingness to quit* a job environment and, job satisfaction among police officers in general. A detailed general analysis of the determinants of workers' willingness to quit is missing as such a factor has usually been a sub-category in an overall index of job satisfaction (see, e.g., Caplan, Cobb, French, Van Harrison, & Pinneau, 1980; Mowday, Steers, & Porter, 1979; Myers & Allen, 1997). Why is it interesting to focus on workers' *willingness* to leave and not just the actual quitting behaviour? First of all, employers and supervisors should be keen to have a "sensor" or "indicator" that helps to see whether or not their employees are keen to leave the department. High turnover rates are connected with transaction costs such as losing and building workers' human capital stock which can also affect firm's performance (Judge et al., 2001). Law enforcement jobs, for example, are faced with high fluctuation rates. The leadership has therefore a natural interest to know about the causes that generate workers' incentives to leave the workplace. From a policy and management perspective one is therefore interested to understand the incentive structure of the current workers and not just the ones who already left. The leadership can still influence current workers' decisions and attitudes whether or not to quit a current job environment. Moreover, generating feedback from those that already left may generate noise and biases. These individuals may justify ex post their actions drawing a biased picture of the previous work environment and work problems.

In addition, the existing literature on police officers strongly focuses on the demographic relationships of job satisfaction, such as education (Carter & Sapp, 1990), race (Haarr & Morash, 1999), gender (Sullivan, 1993), intelligence (Ganzach, 1998), or job connected factors such as experience (Dantzker, 1994). It may be valuable to focus in a stronger way on the impact of the working conditions and environmental aspects. Traditional models of job satisfaction (Herzberg, 1968; Locke, 1976) included the work environment as an important determining factor of job satisfaction. From a theoretical and empirical perspective it helps to work with data where individuals have a similar job profile, where therefore many of the potential unobserved factors are common across a large group of individuals. Moreover, the working environment for police officers is recognised as being one of the most stressful and exceedingly difficult careers (Robertson & Cooper, 2004). Officers are recognised as suffering from high levels of stress through performing work that is both physically and emotionally draining (Brown & Campbell, 1990; Dick, 2000; Gershon, 2000; Gershon, Barocas, Canton, Li, & Vlahov, 2009; Gudjonsson & Adlam, 1985; He, Zhao, & Archibold, 2002; Morash, Haarr, & Kwak, 2006; Stotland, 1991). Research into the traditional theories of motivation and job satisfaction (Herzberg, 1968; Locke, 1976) found that the nature of the work itself can drive satisfaction (Zhao, Thurman, & He, 2009). Working in a particular job generates intrinsic feelings that produce positive attitudes about that duty (Tietjen & Myers, 1998). Lane (1998), e.g., stresses that for ‘those *seeking* jobs, pay may be the most important consideration, but for the employed, the intrinsic feature of work not easily priced by the market is more important’ (p. 478).

The examination of the determinants of job satisfaction and, even more importantly, an analysis of workers’ willingness to stay is therefore a relatively underexplored topic in the literature for police officers. Little has been done to determine the size and impact of

environmental and organizational factors despite studies that already stressed years ago the usefulness of such an analysis. Brown and Campbell (1990), for example, stressed that “empirical evidence is somewhat scant in providing a systematic account of those aspects of a job which are stressful or the impact that these have on police officers. In practical terms this makes designing successful interventions difficult in both identifying type of intervention and targeting appropriate recipients” (p. 305). Some of the factors we explore in this paper are: physical, psychological and event stressors, perceptions of workplace fairness and acceptance, work-life balance, and social capital, and common control variables such as rank, experience, race or gender. We show in this study that such factors strongly contribute to individuals’ willingness to keep working in the same work environment. Previous research has, for example, shown a strong link between low levels of job satisfaction and quitting behaviour, absenteeism and lower work performance (Clark, Georgellis & Sanfey 1998; Drago & Wooden 1992; Freeman 1978; Gordon & Denisi 1995; Judge et al. 2001).

We will work with an interesting survey data set conducted with police officers of the Baltimore Police Department in Maryland, USA (Gershon, 1999, 2000). The survey covers many job related factors (both positive and negative), as well as personal, organisational and social questions. The sample closely resembles the demographic characteristics of the police department due to well developed sampling strategies and a very high response rate.

The paper is structured as followed. Section two briefly reviews the theoretical background of the topic by exploring determinants of job satisfaction on the basis of related literature. Section three explains the dataset as well as the methods applied. Section four presents

the main empirical results, which are discussed in section five. Finally, section six draws some conclusions.

II. DATA AND KEY HYPOTHESES

1. Data Source

The data for our analysis are taken from the study “SHIELDS” (Study to Help Identify, Evaluate and Limit Department Stress) conducted by Gershon (1999) in Baltimore, Maryland. Originally, the study aimed to examine questions about the relationship between police stress and domestic violence in police families. In a collaboration of the Baltimore City Fraternal Order of Police, the Baltimore Police Department, and the research team from the Johns Hopkins School of Public Health a questionnaire was developed covering questions in the areas of stress, coping strategies and health outcomes as well as questions related to fairness and job satisfaction within the organisation.

Specifically, in this study we focus as a dependent variable on the question whether employees intend to look for another full-time job outside the department within the following year. Study participants were recruited from the Baltimore Police Department in Baltimore which provides law enforcement services to about 700,000 inhabitants in Maryland. The five-page questionnaire was administered to a sample of 1,104 police officers and was aimed at a tenth-grade literacy level, taking approximately twenty minutes to complete. Due to the well developed sampling strategies, the sample closely resembles the demographic characteristics of the department, which had 3,061 sworn employees in 1996, including 2,636 males (86%) and 425 females (14%). Thus, the sample covers roughly a third of the whole study population. The response rate which was calculated by the number returned by each precinct compared with the

average number of sworn employees at each precinct on the day of the survey was very high, amounting to 68% (Gershon, 1999). From approximately 1,200 questionnaires distributed 1,104 were returned (more than 92%). Thus, due to the very high response rate, the excellent sampling strategies and the anonymous nature of the study we are quite confident about the reliability of the data.

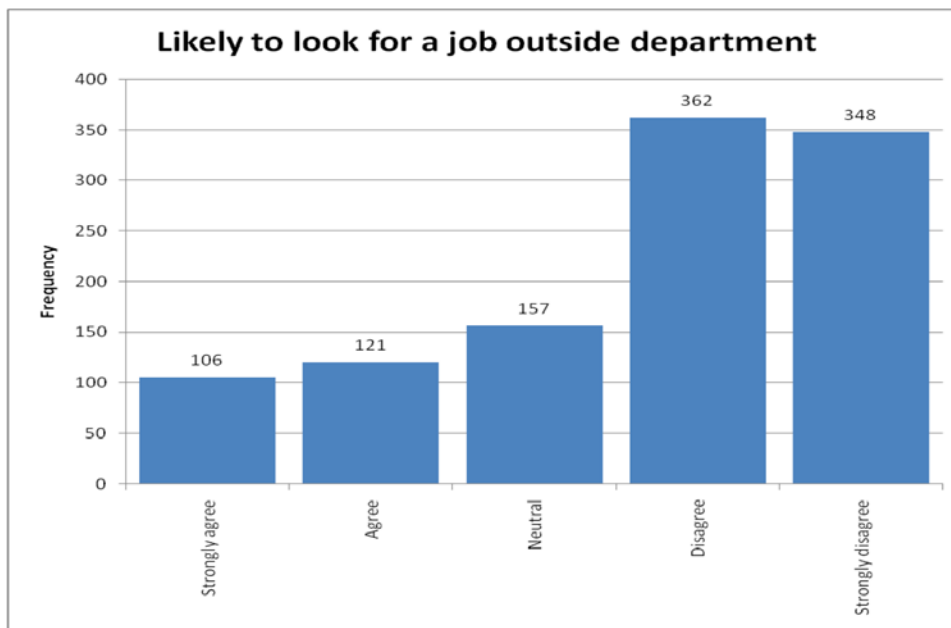
Almost 86% of the employees are male. Regarding the ethnic group, a majority is Caucasian (64%), followed by African-American (33%) and Hispanic (1%). Considering the joint distribution of gender and ethnic groups, 59% were Caucasian men, followed by 23% African-American men, 9% African-American women and 5% Caucasian women. The main position was officer (55%), followed by detective and sergeant (13% each). A huge majority of employees was either married or had a live-in partner (68%), while 19% declared themselves as singles. The mean age was 36 years, ranging from 20 to 66. On average, people have been working in the department for 11.5 years (lasting from 0 to 44) and have 1.18 children living at home (varying between 0 and 7).

2. Willingness to Quit

Work attitudes have been shown to be some of the best predictors for staff turnover (Griffeth, Hom, & Gaertner, 2000). That is, workers that report low levels of job satisfaction are much more likely to be searching for an alternative employment and individuals who indicated they were actively searching for alternative employment were much more likely to quit. The willingness to quit has often been used as a sub-factor in a job satisfaction index, but has less frequently been analyzed as a single factor (Hackman & Oldham 1974; Meyer & Allen 1997; Mowday et al., 1979). Meyer and Allen (1997) extend the willingness to quit by assessing the

opinions of the employee to company loyalty, employee mobility and willingness to leave the current employment for better monetary incentives. To measure workers' willingness to quit we use the following question: "It is likely I will look for another full-time job outside this department within the next year". Possible answers ranged on a 5-point Likert scale from "strongly agree" to "strongly disagree". About 65% of the people answered with "disagree" or "Strongly disagree", while approximately one third of the sample is not so sure about staying in the job, answering either with "strongly agree", "agree" or "neither agree/disagree". Thus, as Figure 1 shows, the distribution is skewed to right, although it gives us sufficient variation to examine police officers' willingness to quit.

Figure 1: Distribution of the Dependent Variable



3. Hypotheses

The study of work attitudes and job satisfaction has been a cornerstone of industrial psychology and relations over 60 years, beginning with examinations of the link between work attitudes and performance in the Hawthorne studies (Roethlisberger & Dickson, 1939). There has been a plethora of research studies that have intensively exploring the link between job satisfaction and productivity, reporting very mixed findings (see, e.g., Judge et al., 2001). In more recent times the study of job satisfaction has shifted away from the purely performance enhancing studies to focus on the increasingly costly area of employee retention. Low levels of job satisfaction have been linked to higher rates of quitting (Freeman, 1978) and high rates of absenteeism (Drago & Wooden, 1992). The perception of job satisfaction for an individual is a complex construction. This also induces the incentive to consider a large set of factors going beyond socio-demographic determinants to be able to generate suitable and valuable insights and to avoid omitted variable biases. It therefore surprises that there are still a large set of studies that focuses on the impact of a single or a limited group of factors (e.g. education: Buckley & Petrunik, 1995; race or gender: Haarr 1997; rank: Dantzker 1994) instead of a multivariate approach that includes a subset of independent variables to better isolate the effects of single factors.

Social Capital

Grootaert (2001, pp. 10-11) stresses that there are three major views on social capital. First, the concept developed by Putnam (1993) interpreting social capital as a social network, as networks of civic engagement facilitating coordination and cooperation. Second, Coleman's

(1988, p. 598) approach that defines social capital as “a variety of different entities” that consists of social structure aspects, that also facilitate certain actions. This allows taking into account not only horizontal (co-worker) but also vertical social relationships (police officers with different rankings). The third concept considers the social and political environment that enforces norms and shapes social structures. Social capital is therefore used to describe aspects of social networks, relationships and trust (Coleman, 1988; Fukuyama, 2003; Portes, 1998; Woolcock & Narayan, 2000). It has been shown that a high level of social capital enables co-operation between actors and facilitates superior social outcomes (Boix & Posner, 1998). Cooperation and trust between co-workers and units can lead to lower levels of pressure, higher levels of flexibility and better coordination resulting in mutual benefit and less opportunistic behaviours (Dasgupta, 1999). Good social working environments contributes to the fulfilment of basic human needs such as approval, affiliation, and a sense of belonging (Repetti, 1993) which can improve job satisfaction levels. Thus, one could stress that social capital within any workplace is important but the special nature of police work similar to the military makes trust, reciprocity and cooperation between colleagues even more vital (Torgler, 2003).

Social capital can facilitate better working environments for employees, by providing a foundation for effective social interaction which promotes camaraderie and social identity (Coleman, 1988; Fukuyama, 2003). This group coordination creates greater worker interaction which can promote greater job satisfaction (Tiejen & Myers, 1998; Wycoff & Skogan, 1993). Additionally, higher levels of social capital have been shown to reduce perceived stress levels and the negative health effects associated with high levels of stress (Fischer & Sousa-Poza, 2008). It is through this mechanism that higher levels of social capital can be seen to improve job satisfaction levels. Research shows that there exists a strong relationship between job satisfaction

levels and willingness to quit, such that higher levels of job satisfaction correlate to lower actual quits and lower willingness to quit levels (Freeman, 1978; Gordon & Denisi, 1995; Clark, Georgellis, & Sanfey, 1998).

How can we measure social capital empirically? Paldam (2000, p. 630), describes three families of social capital concepts: trust (cognitive social capital), cooperation (collective action) and networks. He points out that these conceptual families come together because “most people build *trust* in and *networks* to others and come to *cooperate* with them” (p. 629). Paldam’s view is in line with our rationale for working with the following two proxies for social capital, namely whether “there is a good and effective cooperation between units” and whether one “can trust his/her work partner”. Possible answers ranged from strongly agree (1) to strongly disagree (5). Trust is then often connected with the element of reciprocity or interactions depending upon specific individual or group characteristics. This notion is essential for our analysis as we are exploring the work environment and its implication on individuals’ willingness (not) to quit. Thus, we can derive the following first hypothesis:

Hypothesis 1: A more effective cooperation between units and a higher trust in the work partner lead to lower willingness to quit the department.

Based on these two questions we build an index measuring social capital at work. For reasons of simplicity we reverse the index to facilitate a more intuitive interpretation of our results. Thus, the index ranges from 2 to 10 with higher levels indicating a higher level of social

capital. The level of internal consistency was moderate (Crombach's $\alpha=0.53$). However, one should note that using the single factors leads to similar conclusions.

Fairness and Acceptance

One can assume that workers are “social animals”, seeking to be accepted and valued by others (Cropanzano, Bowen & Gilliland, 2007). The theory of social comparison (see Festinger, 1954) and the theory of relative deprivation (Stouffer, 1949) show that the comparison with others is an important phenomenon. Relative deprivation theory investigates interpersonal and inter-group relations and comparisons. It stresses that a lower perception of one's own (group) status or one's own welfare in relation to another person (group) can be the source of hostility towards the other individuals or groups. A relative disadvantage can lead to frustration and in our case to a willingness to quit the department. Previous studies have shown that a relative disadvantage can have motivational and behavioral consequences connected to frustration (Torgler & Schmidt 2006; Torgler, Schmidt, & Frey, 2007). Research has shown that justice or fairness have direct effects on levels of job satisfaction (Hom & Griffeth, 1995; Griffeth & Gaertner, 2001). Fairness can be described as “stressor (a suitably interpreted environmental event that evokes an aversive response) ... which takes place alongside others stressors such as workload or role conflict” (Cropanzano, Rupp, & Byrne, 2003, p. 66).

The concept of fairness and acceptance is closely related to social capital. Good effective managerial behavior is crucial to the formation of social capital in a workplace, such that a well organized workplace fosters an environment of trust between all members of staff (Hodson, 2005). The study of fairness in psychology started with Adams's work on equity theory (Adams,

1965) emphasizing distributive fairness, i.e. the perceived fairness of outcomes (Cohen-Carash & Spector, 2001). According to equity theory which has a long history that can be traced back to Aristotle's Nicomachean Ethics, we are interested in how much output is generated relative to how much input is provided, anchoring the relationship to some standard (Cropanzano, Bowen, & Gilliland, 2007). The theory suggests that a lack of equity in an exchange relationship creates a sense of distress, especially for the victim. Tyler and Smith (1998) state that the equity theory is important because it hypothesizes that satisfaction and behavior are linked not only to objective outcome levels, but also to the relation of the own outcome to what would be judged fair. Lacking equity creates a sense of distress. Disadvantage in such a situation creates anger, advantage feelings of guilt (see Adams, 1965; Homans, 1961). The perception of fairness has been shown to have links to quitting or voluntary turnover of staff (Griffeth & Gaertner, 2001; Hom & Griffeth, 1995). Employees who perceive inequitable treatment are more likely to voluntarily leave their current employment. Zohar's (1995) investigation of 213 nurses demonstrates that lower levels of justice leads to higher experienced physical stress symptoms as well as higher turnover intentions. Nursing is another service orientated job with also many stress-strain factors. A further link between fairness and job satisfaction comes from research done on burnout (e.g. see Maslach, 1993; Maslach & Jackson, 1981; Maslach & Leiter, 1997), where higher levels of perceived unfairness correlate to higher rates of burnout and lower levels of job satisfaction.

Moreover, one of the most important social psychological reasons for expecting cooperation is reciprocation (see Gouldner, 1960; Axelrod, 1984; Cialdini, 1984; Regan, 1971). We distinguish between positive and negative reciprocity. Positive reciprocity is the impulse to be kind to those who have been kind to us. On the other hand *an eye for an eye, a tooth for a*

tooth is a principal example of negative reciprocity (Fehr & Gächter, 1998). Thus, the importance of legitimacy and allegiance to the department and people within the department becomes central. The way people are treated by the department in general and co-workers in particular affect the evaluations of department and job and the willingness to co-operate (see, e.g., Lind & Tyler, 1988; Tyler, Casper, & Fisher, 1989). On the other hand, positive actions within the department and among co-workers are intended to increase the positive attitudes and commitment to engage within the police force.

Hypothesis 2: A higher level of perceived fairness and acceptance within the police unit increases workers' willingness to not to quit.

The literature on organizational justice differentiates between distributive justice, procedural justice and interactional justice. While *distributive justice* considers perceptions of fairness of outcomes (equity, equality, need), *procedural justice* emphasizes the importance of fairness of the methods or procedures used (decision criteria, voice, control of the process) and *interactional justice* the perceived fairness of the interpersonal treatment received (sensitivity, dignity, respect) (Cohen-Carash & Spector, 2001). Our proxy covers strongly the third component. It is an index including questions such as being more likely to be criticized for mistakes than peers (same rank), being less likely to get chosen for certain assignments because of race, gender etc., the frequency of gender related jokes in the department and being considered militant if questioning the way things are done. Possible answers ranged on a 5-point scale from

“Strongly agree” to “Strongly disagree”. Thus, the index ranges from 4 to 20 with higher levels indicating a higher degree of fairness in the department ($\alpha=0.65$).

Work-Life Balance

How an individual perceives their job is not completely isolated from how an individual perceives life outside of work, or their life-satisfaction. It stands to reason that low levels of life satisfaction would impact upon the perception of job satisfaction (Warr, 2002). Investigations of job and life satisfaction found large areas of overlap and significantly positively correlated (Tait, Padgett, & Baldwin, 1989). Robinson (2006, p. 26) stresses that in modern societies “the amount of time devoted to leisure – as opposed to work – is biased towards work because there is a fundamental flaw in the economic system, this means individuals are destroying work-life balance by voluntarily engaging in longer hours of work than would maximize their wellbeing”. He extends this argument by stating that the ‘flaw’ is actually a market failure driven by the inability of individuals to negotiate for optimal work hours outcomes. Ayree, Fields and Luk (1999) work investigated the cultural variations of the work-family relationship in both U.S. and Hong Kong workers. They demonstrated that while there were some cultural variations, predominately due to Confucian social structures, conflict and stress caused by integration of work-family results in higher turnover and loss of productivity. Anderson, Coffey & Byerly (2002) extended this analysis and concluded that the work-family conflict was clearly associated with lower levels of job satisfaction, higher job turnover and stress. Furthermore, they concluded that programs addressing these problems would not be successful unless workers also believed

that if they took advantage of these programs, their career advancement would not be in jeopardy.

Unsurprisingly, this indicates that individuals who are happier in their general life are much more likely to be happier in their jobs and report higher levels of job satisfaction. Research indicates that the amount of hours worked in the job has the largest spillover effect on the home satisfaction levels with considerable variation between genders. Excessive hours spent at work reduces the amount of time available for leisure and home duties, thus a balance of home and working life creates higher levels of job satisfaction (White, Hill, McGovern, Mills, & Smeaton, 2003).

Hypothesis 3: A higher level of work-life-balance reduces individuals' willingness to quit the department.

Our measurement of work-life-balance includes the question “There is not enough time at the beginning or end of the day for my chores at home” with possible answers ranging from “strongly agree” (1) to “strongly disagree” (5) again. Thus, higher levels of the variable indicate a higher level of work-life balance (ranging from 1 to 5).

Stress

External stressors have shown to have a high impact on job satisfaction and the intentions to quit (Scott, Gravelle, Simoens, Bojke, & Sibbald, 2006; Shields & Ward, 2001). Scott et al.

(2006) investigated the relationship between job satisfaction and the intentions to quit of doctors, specifically GP's, and found a strong relationship between high stress levels, job satisfaction and willingness to quit. More recently, economists have become interested in examining the links between job satisfaction and negative health effects. For example, it has been shown that there is a positive link between job satisfaction and health, where employees who have higher levels of job satisfaction also feel healthier and are generally more satisfied with their health state (Fischer & Sousa-Poza, 2009). Civil service workers in the lowest level positions were up to 4 times more likely to die from a heart attack and more susceptible to cancers and gastrointestinal disorders compared to those of higher rank (Marmot, Bosma, Hemingway, Brunner, & Stansfield, 1997). This suggests that low ranked workers are more prone to self-esteem issues and can suffer from anxiety and depression, due to little control and little responsibility (Gross, 1996).

Hypothesis 4: Higher stress levels are correlated with a lower willingness to stay in the unit.

Following Kurtz (2008, pp. 224), we construct an index of perceived stress including both psychological and physical stress measures. We will add the variable sequentially in the specification to better check the robustness of the results. Regarding the psychological stress measures, participants were asked if they experienced the following signs of psychological stress in the past 6 months: restlessness, feeling hopeless, panic attacks, irritability, withdrawal, depression, and emotional depletion. A four-point Likert scale (Likert, 1932) with possible answers ranging from never (1) to always (4) was used. As physical stress indicators we used

five questions assessing whether respondents had experienced nausea, trouble getting breath, a lump in the throat, pains or pounding in the chest, and faintness or dizziness in the 6 months prior to the survey. Finally, we combine the psychological and physical stress measures into a combined stress index, ranging from 12 to 48 ($\alpha=0.86$) with increasing levels indicating higher (perceived) stress levels.

We also focus on a further variable, namely strain (objective stress levels) in order to examine the effect of stress on our dependent variable in a better manner. Following Swatt et al. (2007), strain is measured using a nine-item negative work-related events scale. More detailed, participants were asked whether they have experienced certain traumatic events during their work and how much it emotionally affected them. In total we include nine incidents such as a violent arrest, shooting someone, being the subject of an IID investigation, responding to a call related to a chemical spill, responding to a bloody crime scene, personally knowing the victim, being involved in a hostage situation, attending a police funeral and experiencing a needle stick injury or other exposure to blood and body fluids. For each event officers were asked if they ever experienced this event, and if so, how much it affected them. Possible answers ranged from “not experienced” (0), “not at all” (1), “a little” (2) to “very much” (3). Thus, we assume that experiencing an event, although without affecting the officer emotionally, was more stressful than not experiencing the event at all. The resulting summative scale ranges from 0 to 27 with higher levels indicating more subjective strain ($\alpha=0.79$).

III. EMPIRICAL ANALYSIS

As our dependent variable for the willingness to quit is measured by a 5-point Likert scale for the intention to leave the department (from (1) “strongly disagree” to (5) “strongly agree”) we applied an ORDERED PROBIT model to take into account the ranking information of this scaled dependent variable. However, as in the ORDERED PROBIT estimation, the equation has a nonlinear form, only the sign of the coefficient can be directly interpreted and not its size. We therefore calculate the marginal effects at the multivariate point of means. The marginal effects are reported in rows three and four for each variable in Table 2 and 3. The first value describes the average percentage change in the explanatory variable when moving from “agree” (2) to “strongly agree” (1) to the question whether it is likely to look for another full-time job outside the department within the next year. Finally, the fourth row of each coefficient describes the average percentage change in the explanatory variable when moving from “disagree” (4) to “strongly disagree” (5). In other words, the means of the explanatory variables are compared between groups, where the marginal effect reports the average difference between groups when moving from one discrete outcome of the dependent variable to the next. In the case of dummy variables (gender, race and marital status), the marginal effects reported indicate the discrete change of the dummy variable from 0 to 1.

To check the robustness of the model, we will also report findings using a PROBIT or an OLS model. PROBIT estimation may be interesting to use when looking at the distribution of the dependent variable (see Figure 1). We create a natural cut-off point, where the responses “strongly agree” and “agree” (meaning strong dissatisfaction with the job and high willingness to leave) resulted in a dummy variable with the value 0, neutral answers as well as positive answers

yielded a value of 1. Subsequently, we employed a PROBIT model with the same explanatory variables. In the OLS estimations we also report standardized beta coefficients to get a better idea which variables are more or less important. Standardized coefficients put everything into common metric namely standard deviation units. In all regressions we used robust standard errors controlling for heteroskedasticity of unknown form. It should be noted that we recode the variable in such a way that higher values are correlated with a lower willingness to quit the department.

We use several control variables, namely number of years working for the department (referred to as experience), current rank (ranging from (1) Officer Trainee to (6) Lieutenant or above), number of children (ranging from 0 to 7), as well as dummies for the ethnic group (1 if Caucasian), marital status (1 if married or live-in partner) and gender (1 if female and 0 otherwise). It is generally believed that as individuals age they become better able to mitigate the effects of stress (Lennings, 1997), through either acclimatization or through a quasi-natural form of stress inoculation training (Meichenbaum, 2007). Furthermore, we expect that AGE is strongly correlated with rank and should observe similar reductions in reported stress as seen with AGE. However, there is some possible selection bias here, as only those officer who are able to cope with the stress levels as junior officers are promoted to the higher ranks. Research has shown that family support has a positive effect for married men (He et al., 2002), however home-work imbalances and conflicts have also shown to have strong negative effects on job satisfaction for both women and men (He et al., 2002; Howard et al., 2004).

The meta-analysis of employee turnover rates by Griffeth et al., (2000), shows that turnover rates of female staff are similar to that for males. Similarly, job satisfaction in police

officers has been shown not to differ across genders (Dantzker & Kubin, 1998). Research has shown that any type of racial harassment results in significantly lower levels of job satisfaction, and threatening racial incidents or career related discrimination increases the intention to voluntarily leave the current job. However, there does not appear to be a significant effect of racially offensive behavior on actual job change (Antecol & Cobb-Clark, 2009). This research would indicate that while racial discrimination has a direct effect on job satisfaction it does not have a significant effect on willingness to leave the profession. This could be explained by the availability of other jobs or the prospects of these individuals to obtain work elsewhere. Research illustrates through surveys of African-American individuals that they were more satisfied with their jobs, but as Bartel (1981) points out, this could have been due to lower aspirations of African-American individuals. While blacks do earn less and should be less satisfied, discrimination may have caused blacks to be satisfied with less. Antecol and Cobb-Clark's (2009) examination of willingness to quit found that better civilian opportunities, in respect to promotion, education and training increased intentions to quit military service. Given the possibility of lower alternative options available to non-whites, being happy with the job they have makes economic and rational sense.

First empirical results are reported in Table 2. As can be seen the results do not change when we apply other estimation methods (PROBIT and OLS). As expected, higher levels of social capital and a better work-life balance lead to increasing rates of job satisfaction, meaning a lower probability of leaving the department (both highly statistically significant). Thus, supportive measures that build up trust between employees as well as a better cooperation between units both promote higher willingness to stay in the department. Moreover, a considerable balance between commitments at work and at home, as measured with our variable

of work-life balance is also *ceteris paribus* conducive to reduce the willingness to quit. For example, equation (1) indicates that an increase in the social capital scale (*work-life balance*) by one unit from the average increases the probability of stating that it is very unlikely to look for another full-time job outside the department within the next year by around 2 (4) percentage points. The same applies to our measure of fairness. Thus, departments with a high level of interactional fairness tend to have workers with a lower willingness to quit their current department. Looking at the beta coefficients we observe that the fairness variable has the strongest relative influence among the used independent variables. Thus, based on these results we can conclude that the first three hypotheses cannot be rejected.

Looking at the control variables we observe that experience (the number of years working for the department) has a negative effect on willingness to quit. For testing the robustness of the impact of experience, we also run regressions including both experience and age. Both had the expected negative signs; however the coefficients were not statistically significant in that case due to the high correlation between the variables ($r=0.88$). Thus, we applied a Wald-test for joint significance of experience and age on job satisfaction and the results indicate that both factors are jointly statistically significant which supports the argument that experience and age matter. We also ran regressions including either of these variables separately. In the case of including rank, but excluding experience, the coefficient for the rank variable still was positive, but not statistically significant (also using an ORDERED PROBIT model). By excluding rank and including experience, the experience variable still was significantly negative, while their joint significance was also confirmed by a Wald F-Test. As the current rank was positively related to willingness not to quit (albeit not always significant), experience, however, had a negative influence, we include both variables in our following regressions. Furthermore,

females as well as whites are more satisfied with their job according to our data. Finally, the dummy variable for being married has a statistically significant positive coefficient at the 10% level in equation (1) but not anymore in PROBIT and OLS estimations. Experience is always statistically significant with a negative sign, while rank is not anymore statistically significant in equation (2) and (3). Finally, the coefficient for the number of children also has the expected positive sign, albeit it is not statistically significant.

To check the strength of our model, we also run with our OLS model a test on omitted variables biases by applying the Ramsey's RESET Test. More precisely, we include powers of the fitted values of the willingness not to quit into our regression. As they were jointly not significant ($F=0.42$ with $p=0.736$), the null hypothesis that the model has no omitted variables cannot be rejected by the Ramsey's RESET Test. This indicates that the regression is relatively well specified.

In Table 3 we provide an extension testing also hypothesis 4 (stress) and controlling whether the other hypotheses cannot be rejected in line with Table 2. As mentioned, we have two proxies for stress, namely a stress index and stress based on traumatic events (strain index as an objective measure) due to fact that police officers can get into such extreme work situations. Exploring hypothesis 3 is insofar interesting as stress events are very common among police officers. In equation (4) we include the strain index into the previous specification and in equation (5) the stress index covering both psychological as well as physical stress. In equation (6) we add both stress indexes jointly in the specification.

(Table 3 about here)

Remarkably, the inclusion of the strain index does not change the results considerably, meaning that traumatic events at work do not lead to a higher willingness to leave the department. Even perceived stress levels do not have any significant impact on individuals' willingness to leave. To control for specific effects of mental versus physical stress, we also split the variable into its two parts, including both or either of them in the regression (not shown). The results clearly showed that neither mental nor physical stress levels affect individuals' willingness to quit the department. Thus, these results indicate that hypothesis 4 can be rejected. Stress seems not be a significant cause of leaving the department. It might be that police officers perceive stress to be a common and acceptable factor in their job description or in their work profile. It may be interesting to compare these results with other jobs that have similar or comparable stressors (e.g., military environment). For example Bateman & Organ (1983) investigated the links between job satisfaction and social cohesiveness of military personnel, finding that higher levels of satisfaction result in higher rates of cohesiveness. Additionally, Antecol and Cobb-Clark's (2009) investigation of racial harassment and intentions to quit of military personnel shows that while job satisfaction levels are reduced, intentions to quit are not affected. On the other hand, it is worthwhile to note that the results in Table 3 support hypotheses 1 to 3. Our key measures for social capital, work-life balance and fairness still report highly statistically significant coefficients.

IV. CONCLUSIONS

The purpose of this study was to investigate the determinants of police officers' willingness to quit their current department. For this purpose, we work with US survey data that covers a large set of police officers of the Baltimore Police Department in Maryland. Law enforcement agents

are working in strategically important work environmental that is not only characterized as physically and emotionally demanding, but also as an essential part for a well-functioning society due to the fact that inefficiencies in the police force can induce large negative externalities. Police officers, like many other services orientated public jobs, have high turnover rates and the costs associated with recruitment and training is very costly. The problem of attracting and training new officers is further enhanced when the perception of job satisfaction within the police force is low. The advantages of retaining experienced officers are two-fold: it is costly and time consuming to recruit new officers; and when older officers leave they take a large amount of job related human capital with them. Thus, the low retention and high turnover rate in public workers like teachers, police officers and nurses, are demonstrative of a large and growing problem for public authorities around the world (see, e.g., Aiken et al., 2001; Buciuniene, Blazeviene, & Bliudziute, 2005; Okpara, Squillace, & Erondy, 2004).

Job satisfaction has become a major interdisciplinary research topic in the last few decades. However, even with a plethora of new research, relatively little specific investigation has been done on the *willingness* to quit a job environment and job satisfaction among police officers in general. The willingness to quit has mainly been a sub-category within an index on job satisfaction. We stress that it may be useful to explore such a factor separately. It helps to generate a sensor or indicator whether or not their current employees are keen to stay working within the department. Generating feedback for individuals that already left might be noisy and not free of biases. Moreover, the existing literature on police officers' job satisfaction strongly focuses on socio-demographic factors. In this paper we control for these factors but we focus more on the working conditions and environmental aspects within the organization. In particular, we explore whether: 1) more effective cooperation between units and a higher trust in the work

partner lowers police officers' willingness to quit the department; 2) a higher level of perceived fairness and acceptance within the police unit increases workers' willingness to stay; 3) a higher level of work-life-balance reduces individuals' willingness to quit the department; and 4) higher stress levels are correlated with a lower willingness to stay in the unit. Our results indicate that the factors 1) to 3) have a very strong and robust positive influence on police officers' willingness to stay in their department. On the other hand, stress is *ceteris paribus* not correlated with individuals' willingness to quit. We explored stress based on traumatic events (strain index) as well as an index that covered (perceived) psychological and physical stress. Surprisingly, in none of the cases stress mattered. It might be that police officers perceive stress to be an acceptable factor in their job description or in their work profile.

Thus, can these results be generalized to other job environments? One wonders whether similar results are observable when focusing on comparable job profiles (e.g., military service). Many of the police circumstances are comparable to other working environments (e.g. shift work, excessive overtime, heavy workload, poor working conditions and strong interactions with the public). However, police officers also encounter many other situational events such as physical or even life threatening danger and the exposure to disturbing events in general. Such a job profile makes comparisons to other work environments more difficult. On the other hand, we observe that such stressors have no direct impact on workers' willingness to quit. Such a result is in a line with a meta-study on employees' turnover (Griffeth et al., 2000). In addition, we observe that organizational or environmental factors are also extremely important in the police force environment. Strengthening social capital, trust, fairness and cooperation in police departments are appropriate to combat the risk of losing valuable human capital.

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TABLES

Table 1: Descriptive Statistics

Variable		count	percent	n	Mean	σ^2	Min	Max
Willingness To Stay/Not to Quit “It is likely I will look for another full-time job outside this department within the next year”	Strongly agree	106	9.69%	1,094				
	Agree	121	11.06%					
	Neither agree/disagree	157	14.35%					
	Disagree	362	33.09%					
	Strongly disagree	348	31.81%					
Gender	Male	943	85.73%	1,100				
	Female	157	14.27%					
Ethnic Group	African-American	355	32.51%	1,092				
	Caucasian	696	63.74%					
	Hispanic	14	1.28%					
	Other	27	2.47%					
Education Level	High School	165	15.08%	1,094				
	Some College	603	55.12%					
	College	285	26.05%					
	Graduate School	41	3.75%					
Current Rank	Officer Trainee	91	8.27%	1,100				
	Officer	601	54.64%					
	Agent	62	5.64%					
	Detective	144	13.09%					
	Sergeant	143	13.00%					
	Lieutenant or above	59	5.36%					
Marital status	Married	658	59.87%	1,099				
	Live-in partner	88	8.01%					
	Divorced/Separated	135	12.28%					
	Single	213	19.38%					
	Widowed	5	0.45%					
Experience				1,078	11.52	9.28	0	44
Children				1,090	1.18	1.16	0	7
Social Capital Index				1,075	7.19	1.60	2	10
Fairness Index				1,067	13.01	3.20	4	20
Strain Index				1,077	11.98	5.79	0	27
Stress Index				1,060	17.18	4.36	12	48

Table 2: Baseline Model

Dependent variable Method	Willingness To Stay/Not to Quit		
	Ordered PROBIT	PROBIT	OLS
	(1)	(2)	(3)
Social Capital Index	0.052** (2.110) <i>-0.008</i> <i>0.018</i>	0.059** (2.027) <i>0.021</i>	0.059** (2.087) <i>0.072</i>
Work-life Balance	0.113*** (3.401) <i>-0.017</i> <i>0.040</i>	0.180*** (4.470) <i>0.065</i>	0.140*** (3.868) <i>0.120</i>
Fairness Index	0.092*** (7.206) <i>-0.013</i> <i>0.032</i>	0.099*** (6.715) <i>0.036</i>	0.101*** (7.447) <i>0.249</i>
Children	0.022 (0.683) <i>-0.003</i> <i>0.008</i>	0.029 (0.737) <i>0.011</i>	0.022 (0.596) <i>0.020</i>
Rank	0.058* (1.828) <i>-0.009</i> <i>0.021</i>	0.005 (0.138) <i>0.002</i>	0.046 (1.306) <i>0.050</i>
Experience	-0.014*** (-2.770) <i>0.002</i> <i>-0.005</i>	-0.013** (-2.273) <i>-0.005</i>	-0.016*** (-2.832) <i>-0.114</i>
Dummy Female	0.360*** (3.768) <i>-0.044</i> <i>0.134</i>	0.408*** (3.002) <i>0.137</i>	0.434*** (4.318) <i>0.115</i>
Dummy Caucasian	0.203*** (2.791) <i>-0.031</i> <i>0.071</i>	0.198** (2.125) <i>0.073</i>	0.233*** (2.847) <i>0.086</i>
Dummy Married	0.141* (1.739) <i>-0.021</i> <i>0.049</i>	0.142 (1.397) <i>0.052</i>	0.138 (1.514) <i>0.050</i>
R-Squared			0.13
F			17.145***
Ramsey's Reset F (p-value)			0.736
Pseudo R-Squared	0.05	0.09	
Wald Chi-Squared	121.69***	114.16***	
Observations	1016	1016	1016

Notes: z-statistics (Ordered Probit and Probit) and t-statistics (OLS) in parentheses. Regressions with robust standard errors. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Marginal effects are reported in italic below. In the case of Ordered PROBIT, the first value reports the marginal effect for the least satisfied (1), the second for the most satisfied (5) employees. In the case of dummy variables, the marginal effects report the discrete change of the variable from 0 to 1. Standardized beta coefficients (OLS) are reported in bold italic.

Table 3: ORDERED PROBIT Specifications

Dependent variable	Willingness To Stay/Not to Quit		
	(4)	(5)	(6)
Social Capital Index	0.052** (2.066) <i>-0.008</i> <i>0.018</i>	0.044* (1.685) <i>-0.006</i> <i>0.016</i>	0.044* (1.658) <i>-0.006</i> <i>0.015</i>
Work-life Balance	0.107*** (3.161) <i>-0.016</i> <i>0.038</i>	0.113*** (3.252) <i>-0.017</i> <i>0.040</i>	0.108*** (3.090) <i>-0.016</i> <i>0.038</i>
Fairness Index	0.092*** (7.040) <i>-0.014</i> <i>0.032</i>	0.091*** (6.907) <i>-0.013</i> <i>0.032</i>	0.091*** (6.853) <i>-0.014</i> <i>0.032</i>
Children	0.022 (0.670) <i>-0.003</i> <i>0.008</i>	0.016 (0.461) <i>-0.002</i> <i>0.006</i>	0.015 (0.450) <i>-0.002</i> <i>0.005</i>
Rank	0.060* (1.819) <i>-0.009</i> <i>0.021</i>	0.053 (1.615) <i>-0.008</i> <i>0.019</i>	0.054 (1.595) <i>-0.008</i> <i>0.019</i>
Experience	-0.013** (-2.554) <i>0.002</i> <i>-0.005</i>	-0.013*** (-2.588) <i>0.002</i> <i>-0.005</i>	-0.013** (-2.449) <i>0.002</i> <i>-0.004</i>
Dummy Female	0.362*** (3.734) <i>-0.045</i> <i>0.135</i>	0.389*** (3.853) <i>-0.047</i> <i>0.146</i>	0.393*** (3.851) <i>-0.047</i> <i>0.147</i>
Dummy Caucasian	0.199*** (2.694) <i>-0.031</i> <i>0.069</i>	0.220*** (2.932) <i>-0.034</i> <i>0.077</i>	0.215*** (2.838) <i>-0.033</i> <i>0.075</i>
Dummy Married	0.143* (1.761) <i>-0.022</i> <i>0.050</i>	0.156* (1.889) <i>-0.024</i> <i>0.054</i>	0.157* (1.905) <i>-0.024</i> <i>0.055</i>
Strain Index	-0.002 (-0.340) <i>0.000</i> <i>-0.001</i>		-0.001 (-0.165) <i>0.000</i> <i>-0.000</i>
Stress Index		-0.005 (-0.587) <i>0.001</i> <i>-0.002</i>	-0.004 (-0.427) <i>0.001</i> <i>-0.001</i>
Wald Chi-squared	120.38***	120.98***	119.44***
Wald Chi-squared for joint significance (rank, exp)	7.05**	6.76**	6.26**
Observations	1002	985	973

Notes: z-statistics in parentheses. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

Marginal effects are reported in italic below, where the first value reports the marginal effect for the least satisfied (1), the second for the most satisfied (5) employees. In the case of dummy variables, the marginal effect reports the discrete change of the variable from 0 to 1.