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## Retaining the Thin Blue Line: What Shapes Workers' Intentions not to Quit the Current Work Environment

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# **Working Papers in Economics and Statistics**

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

Martin Gächter, David A. Savage and Benno Torgler

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# Retaining the Thin Blue Line: What Shapes Workers' Intentions not to Quit the Current Work Environment

Martin Gächter\*, David A. Savage<sup>†</sup> and Benno Torgler<sup>‡</sup>

## Abstract

The purpose of this study was to investigate the determinants of police officers' intentions to quit their current department. For this purpose, we analysed US survey data that included a large set of police officers from the Baltimore Police Department in Maryland. Our results indicate that more effective cooperation between units, a higher trust in the work partner (social capital), a higher level of interactional justice and a higher level of work-life-balance substantially reduces police officers' intentions to quit. On the other hand, high levels of physical and psychological strain and the experience of traumatic events were not correlated with the intentions to quit the department. These findings suggest that police officers accept high levels of stress as inherent to the job of policing.

**JEL classification:** I1, I12, I31, J24, J81, Z13

**Keywords:** Quit Intentions; Turnover Rates; Job Satisfaction; Stress; Police Officers; Work-Life Balance; Fairness; Acceptance

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# 1 Introduction

Individuals spend a large amount of their life-time working which plays a central role in society (see, e.g., Hochschild, 1997). It is well established that the circumstances of work were key sources of well-being (Lane, 1998). In the last few decades a lot of research has been performed attempting to discover how to recruit and retain good workers and generate higher levels of job satisfaction. This important work raised interest across several fields 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, and Patton, 2001). The nature of police work creates a challenging working environment and as such it is unsurprising that retaining officers over the long term is of great importance to many police departments. These work environments are strategically important and essential for a well-functioning society, primarily due to the fact that inefficiencies in the police force can induce large negative externalities for society. Thus, the conditions law enforcement agents are working in are not only characterized as being both physically and emotionally demanding, but it is also seen as one of the most stressful vocations (Robertson and Cooper, 2004). Retention of experienced officers is vital to maximise performance and successful outcomes; additionally it lowers the cost of training and recruitment. Some research has suggested that the high turnover rates are in part due to low levels of job satisfaction (Freeman, 1978), which makes it more difficult to attract and train new officers. Evidence for this link has been demonstrated through meta-studies of research findings into turnover rates (Griffeth, Hom and Gaertner, 2000). The advantages of retaining experienced officers are two-fold: firstly, it is costly and time consuming to recruit new officers; and secondly, when older officers quit the service, they take with them a large amount of job related human capital.

However, even with a plethora of new research, relatively little specific investigation has been conducted on the intentions to quit a job environment and on job satisfaction among police officers in general. A detailed general analysis of the determinants of workers' quit intentions is missing, even though such a factor has been a sub-category of overall job satisfaction indices for some time (see, e.g., Caplan, Cobb, French, Van Harrison, and Pinneau, 1980; Mowday, Steers, and Porter, 1979; Myers and Allen, 1997). Why is it interesting to focus on workers' intentions 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 predict whether or not their employees are keen on quitting the department. Additionally, high turnover rates are connected with heavy transaction costs, such as losing human capital stock as well as hiring and training costs, which can have a large effect on firm performance (Judge et al., 2001). Law enforcement jobs are faced with high fluctuation rates; the leadership therefore should have a natural interest in determining the root

causes of workers' quitting intentions. From a policy and management perspective one is therefore interested to understand the incentive structure of current workers and not just those who have already left. The leadership is still able to influence current workers' decisions and attitudes whether or not to quit the current job environment. Moreover, generating feedback from those that already left may generate noise and biases, as these individuals may ex post justify their quit actions, and draw a biased picture of the prior work environment and work problems.

The existing literature on police officers has strongly focused on demographic relationships of job satisfaction, such as education (Carter and Sapp, 1990), race (Haarr and Morash, 1999), gender (Sullivan, 1993), intelligence (Ganzach, 1998), or job connected factors such as experience (Dantzker, 1994). It is of value to have a stronger focus on the impact of the working conditions and environmental aspects, such as stressors, strains and traumatic events. For the purposes of this work we utilize the following definitions: Stressors are characteristics of the work environment that cause strain and strains are the labels for the resulting physical or psychological impacts such as burnout or ill-health (O'Driscoll and Dewe, 2001). Traditional models of job satisfaction (see e.g. Herzberg, 1968; Locke, 1976) included the work environment as an important determining factor of job satisfaction. From a theoretical and empirical perspective it is important to analyse data where individuals have a similar job profile, thus many of the potential unobserved factors are common across a large group of individuals. Officers are recognised as suffering from high levels of strain through performing work that is both physically and emotionally draining (Brown and Campbell, 1990; Dick, 2000; Gershon, 2000; Gershon, Barocas, Canton, Li, and Vlahov, 2009; Gudjonsson and Adlam, 1985; He, Zhao, and Archibold, 2002; Morash, Haarr, and Kwak, 2006; Stotland, 1991). However, the nature of the job itself can also derive job satisfaction (Zhao, Thurman, and He, 2009), by working in a particular job intrinsic feelings can be generated that produce positive attitudes about that duty (Tietjen and Myers, 1998). This concept is supported by Lane (1998), who 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 view that the work itself derives a satisfaction beyond payday considerations is supported by research (Griffeth, Hom and Gaertner, 2000). They demonstrate that while pay is a significant factor in turnover rates, it only accounts for 6% of the variance; whereas distributive justice is significant and has an almost eight fold larger impact.

The examination of the determinants of job satisfaction and, even more importantly, an analysis of workers' quitting intentions is therefore a relatively underexplored topic in the police literature. Little has been done to determine the size and impact of environmental and organizational factors despite the usefulness of such an analysis being indicated some

years ago. 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 strain and traumatic event stressors, as well as perceptions of workplace fairness and acceptance, work-life balance, and social capital. Additionally, we utilize common demographic 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 shown a strong link between low levels of job satisfaction and turnovers, absenteeism and lower work performance (Clark, Georgellis and Sanfey 1998; Drago and Wooden 1992; Freeman 1978; Gordon and Denisi 1995; Judge et al. 2001). Nevertheless it is possible that the higher rate of observations for absenteeism and lower levels of work performance could be artefacts of a decision to quit already being made by a worker (Griffeth, Hom and Gaertner, 2000).

The paper is structured as followed. Section two begins by explaining the dataset and methodology used, provides a brief review of the theoretical background by exploring determinants of job satisfaction and presents the hypotheses being tested. Section three presents the main empirical results and discussion. Finally, section four draws some conclusions.

## **2 Data and Key Hypotheses**

### **2.1 Data Source**

The data for our analysis is 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.

In this study our dependent variable is a question of whether or not 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.

A basic demographic analysis of the sample shows that almost 86% of the employees are male and the ethnic 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 rank was officer (55%), followed by detective and sergeant (13% each). The majority of employees were 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).

## **2.2 Intention to Quit**

Work attitudes have been shown to be some of the best predictors for staff turnover (Griffeth, Hom, and Gaertner, 2000). That is, workers that report low levels of job satisfaction and have low levels of job involvement are much more likely to be searching for an alternative employment. Additionally, individuals who indicated they were actively searching for alternative employment were much more likely to quit. Quit intentions have been used for some time as a sub-factor in a job satisfaction index, but has less frequently been analyzed as a single factor (Hackman and Oldham 1974; Meyer and Allen 1997; Mowday et al., 1979). Meyer and Allen (1997) extend the intentions 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. We use the following question as a proxy measure of workers' quit intentions: „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' intentions to quit.

*(Figure 1 about here)*

## **2.3 Hypotheses**

The study of work attitudes and job satisfaction has been a cornerstone of industrial psychology and relations for over 60 years, beginning with examinations of the link between work attitudes and performance in the Hawthorne studies (Roethlisberger and Dickson, 1939). There has been a plethora of research studies intensively exploring the link between job satisfaction and productivity which have reported 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 and high rates of absenteeism (Drago and Wooden, 1992; Freeman, 1978; Griffeth, Hom, and Gaertner, 2000). The perception of job satisfaction for an individual is a complex construction. This induces an incentive to consider a large set of factors, going beyond the traditional socio-demographic determinants. Thus, in order to generate more suitable and valuable insights, we have to apply a multivariate approach which is better able to avoid omitted variable biases faced by earlier, single factor works. It therefore surprises that there is still a large set of studies that focuses on the impact of a single or a limited group of factors (e.g. education: Buckley and 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.

### **2.3.1 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 relation-



ships (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 and Narayan, 2000). It has been shown that a high level of social capital enables co-operation between actors and facilitates superior social outcomes (Boix and 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 contribute 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, while 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 and promoting both camaraderie and social identity (Coleman, 1988; Fukuyama, 2003). This group coordination creates greater worker interaction which can promote greater job satisfaction (Tiejen and Myers, 1998; Wycoff and 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 and Sousa-Poza, 2008). It is through this mechanism that higher levels of social capital can be seen to improve job satisfaction levels. Social capital is not to be confused with the psychological concept of social support, where „social support can be defined as support that effectively makes people feel supported by successfully alleviating strains . . . (or) social interactions that could be supportive (e.g., offering sympathy about a stressful problem, offering to help get a coworker’s work done, or even the mere presence of a colleague)“ (Beehr, Bowling and Bennett, 2010). Social support could be viewed as the behavior generated by social capital, such that high levels of social capital will result in higher levels of support and vice versa. Research shows that there exists a strong relationship between job satisfaction levels and quitting intentions, such that higher levels of job satisfaction correlate to lower actual turnovers and lower intention to quit levels (Freeman, 1978; Gordon and Denisi, 1995; Clark, Georgellis, and Sanfey, 1998; Griffeth, Hom, and Gaertner, 2000).

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' intentions (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 intentions 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 (Cronbach's  $\alpha=0.53$ ). However, one should note that using the single factors leads to similar conclusions.

### 2.3.2 Fairness

One can assume that workers are „social animals“, seeking to be accepted and valued by others (Cropanzano, Bowen and Gilliland, 2007). The theory of social comparison (e.g. 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 or perceived disadvantage can lead to frustration and in our case to an increased intention to quit the department. Previous studies have shown that a relative disadvantage can have motivational and behavioral consequences connected to frustration (Torgler and Schmidt 2006; Torgler, Schmidt, and Frey, 2007). Research has shown that justice or fairness have direct effects on levels of job satisfaction (Hom and Griffeth, 1995; Griffeth and Gaertner, 2001). This is well supported by Griffeth et al.'s (2000) meta-analysis of employee turnover, demonstrating that distributive justice has a very large, significant explanatory power on turnovers. 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, and 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 stems from Adams's work on equity theory (Adams, 1965) emphasizing distributive fairness, i.e. the perceived fairness of outcomes (Cohen-Carash and 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, and 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 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 creates anger, and 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 and Gaertner, 2001; Hom and 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 strain symptoms as well as higher turnover rates. Nursing is another service orientated job, also with many stress-strain factors. A further link between fairness and job satisfaction comes from research done on burnout (e.g. see Maslach, 1993; Maslach and Jackson, 1981; Maslach and 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 and 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 and Tyler, 1988; Tyler, Casper, and 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 decreases workers' intentions to quit.

The literature on organizational justice differentiates between distributive justice, proce-

dural 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 and Spector, 2001). Our proxy is very much in line with 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 ( $\alpha=0.65$ ).

### **2.3.3 Work-Life Balance**

How an individual perceives the job is not completely isolated from how an individual perceives life outside of work, or his/her 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 positive correlations (Tait, Padgett, and Baldwin, 1989). Robinson (2006, p. 26) points out 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) 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 and family results in higher turnover and loss of productivity. Anderson, Coffey and 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 strain. 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, and Smeaton, 2003).

- **Hypothesis 3:** A higher level of work-life-balance reduces individuals' intentions 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).

#### 2.3.4 Strains

External stressors have shown to have a high impact on job satisfaction and the intentions to quit (Scott, Gravelle, Simoens, Bojke, and Sibbald, 2006; Shields and 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 and 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, and 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 strain levels are correlated with a higher intention to quit the unit.

Following Kurtz (2008, pp. 224), we construct an index of perceived stress including both psychological and physical strain measures. We will add the variable sequentially in the specification to better check the robustness of the results. Regarding the psychological strain measures, participants were asked if they experienced the following symptoms 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. Similarly, for physical strain indicators we used five questions, namely 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 combined the psychological and physical strain measures into a combined index, ranging from 12 to 48 ( $\alpha=0.86$ ) with increasing levels indicating higher (perceived) strain levels. We also focus on a further variable, namely trauma (objective traumatic event) in order to examine the effect of traumatic events on our dependent variable in a better manner. Following Swatt et al. (2007), trauma 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 ( $\alpha=0.79$ ).

### 3 Empirical Analysis

As our dependent variable for the intentions to quit is measured by a 5-point Likert scale (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 recoded 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 strain as seen with AGE. However, there is some possible selection bias here, as only those officers who are able to cope with the strain 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 and 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 sig-

nificant effect of racially offensive behavior on actual job change (Antecol and 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 quitting intentions. 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 these individuals earn less and should be less satisfied, discrimination may have caused them to be satisfied with less. Antecol and Cobb-Clark's (2009) examination of intentions 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.

*(Table 2 about here)*

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 lower intentions to quit 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 lower quit intentions in 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 quit intentions. 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 intentions to quit 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 intentions 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 intentions 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 strain, namely a strain index and a trauma index based on traumatic events, due to the fact that police officers can get into such extreme work situations. Exploring hypothesis 3 is insofar interesting as trauma events are very common among police officers. In equation (4) we include the trauma index into the previous specification and in equation (5) the strain index covering both psychological as well as physical strains. In equation (6) we add both strain indexes jointly in the specification.

*(Table 3 about here)*

Remarkably, the inclusion of the trauma index does not change the results considerably, meaning that traumatic events at work do not lead to higher quit intentions. Even perceived strain levels do not have any significant impact on individuals’ intentions to quit. To control for specific effects of mental versus physical strain, 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 strain levels affect individuals' intentions to quit the department. Thus, these results indicate that hypothesis 4 can be rejected. Stress seems not to be a significant cause of quitting from the department. It might be that police officers perceive strain 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 and 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.

## 4 Conclusions

The purpose of this study was to investigate the determinants of police officers' intentions to quit their current department. For this purpose, we analysed US survey data that included a large set of police officers from the Baltimore Police Department in Maryland. Law enforcement agents are 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. Because of this important societal role any inefficiencies in the police force can induce large negative externalities in other parts of society. Police officers, like many other services orientated public jobs, have high turnover rates and the costs associated with recruitment and training are of considerable magnitude. Attracting and training new officers becomes 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. Thus, the low retention and high turnover rate in public workers like teachers, police officers and nurses, are demonstrative for a large and growing problem for public authorities around the world (see, e.g., Aiken et al., 2001; Buciuniene, Blazeviciene, and Bliudziute, 2005; Okpara, Squillace, and 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 links between quitting intentions and job satisfaction among police officers in general. The intention to quit has been a sub-category within an index on job satisfaction. We stress that it is also 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' intentions to quit the department; 2) a higher level of perceived fairness and acceptance within the police unit decreases workers' quitting intentions; 3) a higher level of work-life-balance reduces individuals' intentions to quit the department; and 4) higher strain levels are correlated with higher intentions to quit the unit. Our results indicate that the factors 1) to 3) have a very strong and robust positive influence on police officers' intentions to not quit in their department. On the other hand, strain is *ceteris paribus* not correlated with individuals' intentions to quit. We explored strain based on traumatic events (trauma index) as well as an index that covered (perceived) psychological and physical strains. Surprisingly, in none of the cases strain mattered. It might be that police officers perceive stress to be an acceptable factor in their job description or in their work profile.

Our findings raise the question whether these results can be generalized to other job environments or whether similar results are observable when focusing on comparable job profiles (e.g., military service), respectively. 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' intentions to quit. Such a result is in 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. Thus, 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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## 6 Appendix

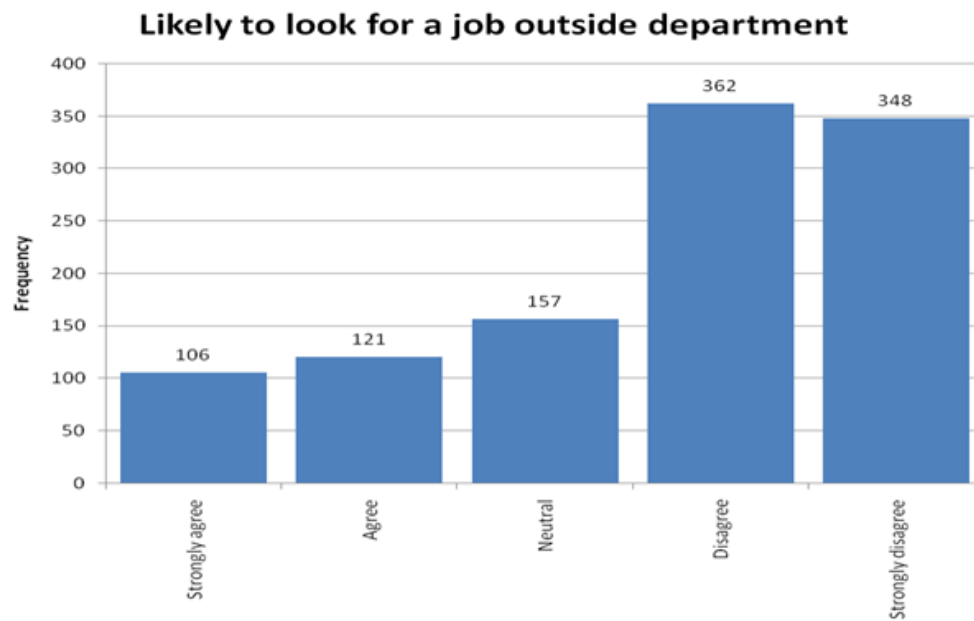


Figure 1: Distribution of the Dependent Variable

Table 1: Descriptive Statistics

Variable		count	percent	n	mean	$\sigma^2$	min	max
Intentions To Quit*	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				1,075	7.19	1.60	2	10
Fairness Index				1,067	13.01	3.20	4	20
Trauma Index				1,077	11.98	5.79	0	27
Strain Index				1,060	17.18	4.36	12	48

*Notes:* \*Intentions to Quit: „It is likely I will look for another full-time job outside this department within the next year“.

Table 2: Baseline Model: Intentions to Quit

Method	Ordered PROBIT	PROBIT	OLS
	(1)	(2)	(3)
Social Capital Index	0.052** (2.110) -0.008 0.018	0.059** (2.027) 0.021	0.059** (2.087) 0.072
Work-life Balance	0.113*** (3.401) -0.017 0.040	0.180*** (4.470) 0.065	0.140*** (3.868) 0.120
Fairness Index	0.092*** (7.206) -0.013 0.032	0.099*** (6.715) 0.036	0.101*** (7.447) 0.249
Children	0.022 (0.683) -0.003 0.008	0.029 (0.737) 0.011	0.022 (0.596) 0.020
Rank	0.058* (1.828) -0.009 0.021	0.005 (0.138) 0.002	0.046 (1.306) 0.050
Experience	-0.014*** (-2.770) 0.002 -0.005	-0.013** (-2.273) -0.005	-0.016*** (-2.832) -0.114
Dummy Female	0.360*** (3.768) -0.044 0.134	0.408*** (3.002) 0.137	0.434*** (4.318) 0.115
Dummy Caucasian	0.203*** (2.791) -0.031 0.071	0.198** (2.125) 0.073	0.233*** (2.847) 0.086
Dummy Married	0.141* (1.739) -0.021 0.049	0.142 (1.397)	0.138 (1.514) 0.050
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. \*, \*\*, \*\*\* denote 10%, 5% and 1% significance levels. Marginal effects are reported below the z-statistics. 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 below t-statistics.

Table 3: ORDERED PROBIT Specifications

	(4)	(5)	(6)
Social Capital Index	0.052** (2.066) -0.008 0.018	0.044* (1.685) -0.006 0.016	0.044* (1.658) -0.006 0.015
Work-life Balance	0.107*** (3.161) -0.016 0.038	0.113*** (3.252) -0.017 0.040	0.108*** (3.090) -0.016 0.038
Fairness Index	0.092*** (7.040) -0.014 0.032	0.091*** (6.907) -0.013 0.032	0.091*** (6.853) -0.014 0.032
Children	0.022 (0.670) -0.003 0.008	0.016 (0.461) -0.002 0.006	0.015 (0.450) -0.002 0.005
Rank	0.060* (1.819) -0.009 0.021	0.053 (1.615) -0.008 0.019	0.054 (1.595) -0.008 0.019
Experience	-0.013** (-2.554) 0.002 -0.005	-0.013*** (-2.588) 0.002 -0.005	-0.013** (-2.449) 0.002 -0.004
Dummy Female	0.362*** (3.734) -0.045 0.135	0.389*** (3.853) -0.047 0.146	0.393*** (3.851) -0.047 0.147
Dummy Caucasian	0.199*** (2.694) -0.031 0.069	0.220*** (2.932) -0.034 0.077	0.215*** (2.838) -0.033 0.075
Dummy Married	0.143* (1.761) -0.022 0.050	0.156* (1.889) -0.024 0.054	0.157* (1.905) -0.024 0.055
Trauma Index	-0.002 (-0.340) 0.000 -0.001		-0.001 (-0.165) 0.000 -0.000
Strain Index		-0.005 (-0.587) 0.001 -0.002	-0.004 (-0.427) 0.001 -0.001
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. Regressions with robust standard errors. \*, \*\*, \*\*\* denote 10%, 5% and 1% significance levels. Marginal effects are reported below the z-statistics, 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 effects report the discrete change of the variable from 0 to 1.

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**Working Papers in Economics and Statistics**

2010-05

Martin Gächter, David A. Savage and Benno Torgler

Retaining the Thin Blue Line: What Shapes Workers' Intentions not to Quit the Current Work Environment

### **Abstract**

The purpose of this study was to investigate the determinants of police officers' intentions to quit their current department. For this purpose, we analysed US survey data that included a large set of police officers from the Baltimore Police Department in Maryland. Our results indicate that more effective cooperation between units, a higher trust in the work partner (social capital), a higher level of interactional justice and a higher level of work-life-balance substantially reduces police officers' intentions to quit. On the other hand, high levels of physical and psychological strain and the experience of traumatic events were not correlated with the intentions to quit the department. These findings suggest that police officers accept high levels of stress as inherent to the job of policing.

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