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# GENDER VARIATIONS OF PHYSIOLOGICAL AND PSYCHOLOGICAL STRESS AMONG POLICE OFFICERS

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Abstract:

This paper analyses the effect of gender on reported and perceived levels of stress through examination of both the physical and psychological indicators. It may be interesting to work with police data due to high stress levels among police officers and the fact that the work environment is male dominant (females are a minority). In our study we not only explore gender differences, but also whether job and private environmental factors such as effective cooperation between units, a higher trust in the work partner, a higher level of work-life-balance and home stability, and a higher level of interactional fairness, affect female and male officers differently. Using multivariate regression analysis of police officers we find that female officers are significantly more likely to report suffering from physical stress indicators than their male counterparts while no gender differences are observable in regards to psychological stress. Moreover, a higher level of trust and cooperation, and a higher level of interactional fairness at work are not able to absorb physical stress among female, while these factors have a strong impact on male officers. On the other hand, for both, female and male officers, work-life balance and stability at home have the tendency of reducing physical stress.

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# I.  INTRODUCTION

Policing work is generally recognised as being one of the most stressful and exceedingly difficult careers (Robertson and Cooper, 2004). Officers are recognised to suffer from very high levels of stress through performing work that is both physically and emotionally draining (Dick, 2000; Gershon, Barocas, Canton, Li and Vlahov, 2009; He, Zhao and Ren, 2005; Kopel and Friedman, 1999; Morash and Haarr, 1995; Schwartz and Schwartz, 1981). Research into gender differences on the effects of stress has reported disparate results over the last few decades ranging from no gender differences (Brown, Fielding and Grover, 1999) to higher stress levels in females (He et al., 2005). Part of these variations is derived from the many different methodologies and measuring techniques utilised across the disciplines who investigate this problem including economics, industrial relations, management, medicine, social psychology, and sociology. It has been proposed that female officers may face additional stress factors than those experienced by their male colleagues (He et al., 2005; Morash and Haarr, 1995; O'Farrell, 1980; Stotland, 1991).

It would appear that gender varies the way in which work stress is experienced. Firstly, men and women can experience different stressors or varying levels of the same stressor from the same single event. Secondly, the reaction of men and women to the event can vary greatly so that each gender experiences a different level of stress from the event. Finally the stressor-strain relationship observed for males and females may differ or that gender may act as a moderator such that it affects one gender and not the other (Desmarais and Alksnis, 2005). The general observed gender differences in physical health and illness which have been identified are that women, on average, live 7 years longer than men; men less often report being ill; men are more likely to die of the main causes of death; more men use alcohol and cigarettes; and more women make use of the healthcare system and have problems with their body image and weight-control (Wersch, 2005).

Many theories have been proposed to explain the variations in stress effects between males and females, some of which include: gender socialisation and gender roles, tokenism, family status and children, workloads, social support, or self reported variations. In Section two we will provide a brief overview of these factors. Additionally, work environmental and demographic factors can have a significant effect on stress such as justice, social capital, work-life balance, traumatic events, age, experience, and race. An interesting question is whether female and male react differently to such environmental factors, McCarty, Zhao and Garland (2007) point out that not enough attention is applied to gender differences within stress and burnout research of police officers. While He et al.'s (2005) examination of police officers did find some gender variations they were predominately based upon race and a general stress measure. We have extended the general stress measure into physiological and psychological components for a more detailed examination of not only gender variations, but stress variations. Our results indeed indicate that there are substantial gender differences in this regard.

In this paper we will therefore investigate gender differences in stress among police officers, utilizing a survey of over 1100 officers from Baltimore in Maryland, USA (Gershon, 1999, 2000; Gershon et al., 2009). The survey covers many job related factors (both positive and negative), as well as personal, organisational and social questions. The sample resembles the demographic characteristics of the police department due to well developed sampling strategies and a very high response rate. 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 stress factors are common across a large group of individuals. Remaining differences within the homogenous environment can then be controlled as good as possible in a multivariate analysis. For example, it is important to control for job opportunities through controlling for the job ranking position and the level of experience. Thus, in other words, the

advantage of focusing on a particular profession such as police officers within a regional department is the chance of improving the ceteris paribus assumption, holding important potential factors constant to be able to isolate in a better manner a gender effect. For example, environmental factors are better controlled or isolated compared to the case where individuals within a survey have heterogeneous job profiles and are acting in different environments (noisy stress and gender comparison). Brown and Campbell (1990:305) already 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."

How are we able to measure the differing stress effects across gender? McCarty et al. (2007) observes that the inattention to gender differences in research into burnout and stress in police officers is problematic given that the majority are males and the result may not be applicable to females. This problem has resulted in poor or badly designed research models and programs designed to detect and alleviate stress and burnout problems. This issue is exacerbated because the perceived levels of stress may vary between genders as well as what actually constitutes a stressor can vary (Morash, Haarr and Kwak, 2006). He et al. (2005) investigated the gender and racial variations of stress within the police force, claiming three initial findings: firstly female officers have higher levels of stress than males; secondly white males have higher stress levels than black males; and finally there are no significant stress differences between white and black female officers. We extend these insights into gender differences in police stress and added additional control variables in an attempt to better isolate environmental and opportunity factors that may bias the analysis of gender differences. Moreover, we differentiate between a large set of stress factors (e.g., psychological, physical and strain factors).

The paper is structured as followed. Section two briefly reviews the theoretical considerations of our paper and examines the major conceptual theories of gendered stress and the other environmental factors on the basis of related literature. Section three explains our dataset as well as the methods applied. Section four presents our main empirical analysis and results. Finally, section five draws some conclusions and policy implications.

## II. THEORETICAL CONSIDERATIONS

In this section we provide the theoretical background why we observe gender differences in relation to stress. We will also show why it is important to control for environmental factors (job and private environment) to be able to isolate a gender effect. We will examine the way in which the effects of stress can be either compounded or mitigated through these environmental and private factors. Factors such as: levels of trust and cooperation between work units, perception of justice or fairness in the workplace and work-life balance may have varying degrees of effect depending on gender. As such we examine some of the theoretical ideology believed to be driving any possible gender differences in experienced and reported stress effects. This includes gender theories such as: gender socialization, role theory, social capital, minority and tokenism.

**Gender Socialisation**

Individuals obtain information pertaining to gender identity through the same socialisation process as other learned behaviours (Bandura, 1986). Socialisation theory entails the process through which individuals are indoctrinated into society from an early age, immersed in the social norms of society, codes of behaviour and expectations, which are ingrained and adhered to throughout their life (Foucault, 1979). Through this process individuals learn the values and roles of the society to which they belong. Gender norms are

concerned specifically with the formation of expectations, behaviours and attitudes of both genders. When such norms become internalised they become part of an individual's personality and used as a reference in the interplay between actors within that society (Parsons, 1964). The breakings of these gender roles can illicit shame and create stress for the individual (Elster, 1985). Traditional male gender roles advocate that men are the providers, are tough and do not show emotional weakness (Real, 1997). This results in negative health aspects for men lower life expectancy, gender role strain, increased health problems, higher drug and alcohol abuse, and higher aggression levels (Courtenay, 2001). Thus, one reason posited for increases in male health problems comes from male gender roles (Copenhaver and Eisler, 1996). Men are not supposed to be ill, feel pain, have physical complaints or go to the doctor. They should be strong and healthy in line with the traditional male stereotype, which might a reason why they self-report lower health problems and utilise health services less than females. In general females are expected to experience higher stress levels in the workplace than males (Greenhaus and Parasuraman, 1999; He et al., 2005).

Based on this theoretical foundation one would expect males to report little to none of any minor health complaints, leading to low correlation to early signs and long term major health problems. Females however, would be expected to report all minor health issues, both physical and psychological. Of interest is if the differences in gender socialisation lead to differences in physical or psychological stress effects. Given that males are less likely to report minor health issues, over time these untreated minor problems could be one of the driving factors for shortened life expectancy and higher reported long run health problems. Variations in psychological stress factors, within police officers, could be derived from role stress such that females are a tokenised minority in a 'masculine' job, creating large stress effects in female officers.

**Social Capital / Social Support**

Social capital is the broad term used to describe aspects of social networks, relationships and trust individuals are able to generate or access, either through friends, family or colleagues (Coleman, 1988; Fukuyama, 2003; Portes, 1998; Woolcock and Narayan, 2000). Furthermore, social capital has been extended to include, for example, a local/civic identity, a sense of belonging, solidarity, and/or equality with other members of the community. Social capital is also related to reciprocity and norms of cooperation generating a sense of obligation to help others, along with a confidence that such assistance will be returned (Putnam, 1993). Social capital has been shown to mitigate the effects of stress (Carlson and Perrewe, 1999; Eastburg, Williamson, Gorsuch and Ridley, 1994). What is unclear, however, is whether women experience unique forms of work related stress (Westman, 2002), as research has shown conflicting results as to any gender effects of social support (for a comprehensive overview see Perrewe and Carlson (2000). Researchers have proposed that minority groups, like women in the police force, may not be receiving a similar benefit of social capital as their male counterparts which is due to the unfavourable organisational environment or tokenism (Martin, 1990; Walker, 1985).

Women are traditionally observed to be much better at utilising social support to reduce the negative effects of stress (Carmel, Anson, Levenson, Bonneh and Moaz, 1991). Through utilization of social support we should observe lower reported physical and psychological stress factors for female officers. However, minority groups or newcomers (e.g. women in a traditional masculine job like policing) are often stronger isolated from social network and find it exceptionally difficult to build the same sort of social support network available to non-tokens in the same position (Davidson and Cooper, 1992). Furthermore, even in situations where social capital is strongly evident it can be fragmented along traditional lines of discrimination like gender, class or race. These fragmentations can

be used to exclude entry into a social network which in turn maintains pre-existing divisions and social structures (Grootaert, 1986). This lower ability to access social support results in a lower ability to manage stress and shock events (Woolcock and Narayan, 2000). Such a pre-existing social structure exists in the predominately masculine police force, therefore females should exhibit higher levels of all stresses, and specifically high impact from strain events (shootings etc.) and higher incidences of burnout (Kop, Euwema and Schaufeli, 1999).

**Family Status, Responsibility, Children and Workloads**

Much research has been done examining the gender differences in relation to family effects on work stresses, these have included: marriage status; children; and additional workloads. Males receive a status advantage from being married, as they are seen as being more responsible or dependable, which can result in financial gain (Friedman and Greenhaus, 2000). In addition to this males with children are seen to be deserving of more opportunity and higher salaries than single males, single females or even married females (Alksnis, 2000). However, females who gain promotion are much less likely to be married or have children, in relation to males in the same position (Greenhaus and Parasuraman, 1999). Working mother have lower incomes and report lower levels of work satisfaction (Friedman and Greenhaus, 2000) both of which increase stress levels. Women report working on average a higher number of hours, namely approximately 10 hours a week more than males, when both home and work duties are tallied (Coltrane, 2000). This higher workload would indicate that women are more likely to suffer from physical and mental health problems (Nelson and Burke, 2002). Such external and situational conditions would lead to an increase in the gender gap. In our multivariate analysis it will be important to control for marital status, having children, ranking position, work-life balance and social capital in the home. We will

also control for potential influence of interactional effects, as explained below in the empirical section.

**Fairness, Justice and Acceptance**

To isolate a gender effect it may also be useful to control for work fairness. Research into perceptions of fairness, or justice, have been shown to strongly influence levels of job satisfaction in workers. Employees who are fairly treated are less stressed, have better attitudes and are more productive (Cropanzano, Rupp and Byrne, 2003; Wright and Cropanzano, 1998). Nurses who reported lower levels of justice experienced more physical symptoms of stress and higher quitting intentions than colleagues who reported higher justice levels (Zohar, 1995). Within traditional management literature three broad classifications of justice are described: distributive (Sheppard, Lewicki and Minton, 1992); procedural (Tyler and Lind, 1992); and interactional justice (Masterson, Lewis, Goldman and Taylor, 2000). Investigations of hospital workers has shown that for justice issues, specifically procedural justice, gender variations do indeed exist (Elovainio, Kivimäki and Vahtera, 2002). However, they also indicate that organizational justice may have variable meaning and impact on gender because of differences in the rank-gender makeup, given that males (doctors) are more likely to be higher ranked than females (nurses). This work was further extended to demonstrate that justice issues can have a detrimental effect on individual health outcomes (Kivimäki, Elovainio, Vahtera and Ferrie, 2003). However, we will only use a simple dual index created to reflect these justice qualities, individual and institutional related to interactional justice. The individual index is a proxy measure for the perceptions of fairness for the individual both directly and indirectly. The second index is a proxy measuring perceptions of fairness within the police force, measuring institutional fairness.

# III.       MODEL AND DATA

We took the data for this analysis 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. The questionnaire covered questions in the broad area of stress, including coping strategies, health outcomes and questions related to fairness and job satisfaction within the organisation. 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 police 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%). The very high response rate, the excellent sampling strategies and the anonymous nature of the study makes it very interesting to analyse this dataset. Table 1 presents descriptive statistics about the data.

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 large 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). The construction of our measures for stress as well as our explanatory variables used is explained in the following section.

On the contrary, among female employees, 65% are African-American, while only 33% percent are Caucasian. While the level of education does not differ significantly between genders, males are more likely to have a higher position (Lieutenant or Sergeant), while the share of detectives – the third highest ranking within the police – is higher among women (23% as compared to 11% in male employees). Concerning the marital status, interesting differences can be observed. While 70% of males are married or have a live-in partner, only 50% percent of females have a partner at home. Moreover, the share of divorced or separated couples is much higher among female officers (22%) than among males (11%). On average, females have less experience in the department, as the average working time amounts to 11.91 years among males as compared to 9.14 years among female officers.


*(Table 1 about here)*


**Methods**

For the purpose of this study, we constructed several indices that measure different aspects and outcomes of stress. First of all, we run t-tests to control whether the mean levels of perceived stress levels differ significantly between males and females (exploring also sub-groups). In a next step, we run regressions to explore the partial effects rather than just the raw effects. We therefore use a large set of explanatory variables, besides the gender dummy including as discussed measurement for social capital, individual and institutional fairness,

work-life balance, stability at home, strain as well as demographic characteristics such ethnic group, number of children, marital status, age, experience and rank within the department. For reasons of simplicity and comparability we used the same independent variables for all the eight stress proxies used as dependent variables. First, we explore a potential gender effect using a large set of stress factors as dependent variables. In those cases where we find gender differences we also analyse whether environmental factors have a different impact on gender. Such an analysis should be useful from a policy perspective allowing to target gender related stress factors in a better manner.

We provide now in the following subsections a detailed description of our key variables.

### *Dependent variables*

The economic costs of stress are estimated to cost the US between $30 and $44 billion a year in treating depression alone, as well as an approximate 200 million lost working days each year (Gabriel and Liimatainen, 2000). In many OECD countries mental health issues created by stress have grown so much that it is becoming the most common reason for disability pensions. The health consequences of excessive stress can include mental and physical illnesses; aggressive and violent behavior; alcohol abuse and decreased work performance (Kawachi, Colditz and Ascherio, 1996; Kopel and Friedman, 1999; Schaufeli and Enzmann, 1998; Schwartz and Schwartz, 1981; Stephens, Long and Miller, 1997; Swatt et al., 2007).

A general definition of stress covers conditions of a physical, biological or psychological nature that strain an organism beyond its power to adapt (Cannon, 1929a, 1929b, 1935; Lovallo, 2005; Selye, 1936). Stress can be explained as a physical process with

an almost mechanical or automatic response from the human body. For example, when an individual's core temperature rises, the body evokes a sweating response to shed the excess heat, Cannon suggested a similar automatic response for psychosocial threats (Cannon, 1929a, 1929b, 1935). The General Adaption Syndrome (Selye, 1936) expands on this concept such that the human body has an innate drive to maintain a biological steady state equilibrium known as homeostasis. Stress, infections and excessive work demands disrupt this equilibrium and trigger the natural response from the body. Over a period of time the body attempts to overcome the disequilibrium and return to homeostasis, this re-equilibrium attempt consumes energy. Over an extended period this can deplete the body's energy reserves and causes exhaustion and in extreme cases, death. These models indicate that it is the inability to adapt to these stresses and/or extended durations of stress that creates ill-effect, and the greater the impact stress has on an individual the greater the probability of harm.

To measure different kinds, aspects and outcomes of stress in order to be able to distinguish between certain effects and their specific influences on stress we construct none less than eight different indices of stress. Moreover, a large range of measurements also is a good robustness test to examine differences between genders on a large scale.

Following Kurtz (2008:224), we construct indices of psychological and physical stress as well as an index which combined these two. Regarding the first index (psychological stress, referred to as *stress1*), 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. These items are then used to create a summative scale that ranged from 7 to 28, with higher levels indicating a higher level of (psychological) stress. The measure showed a satisfactory level of

internal consistency (Cronbach's α= 0.83). The physical stress index (referred to as *stress2*) uses 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. As the construction of the index was similar as explained above, the summative scale ranged from 5 to 20, with higher levels indicating a higher level of (physical) stress (α=0.72). Our third stress indicator combines the psychological and physical components and, therefore, gives an overall indicator of perceived stress (referred to as *stress3*) ranging from 12 to 48 (α=0.86).

In their paper about the effects of gender and race in police stress, He et al. (2005:539) propose three different dimensions of stress: first, somatisation reflecting the psychological distress arising from perception of bodily dysfunction; second, anxiety representing general indicators such as restlessness, nervousness, and panic attacks; and finally, depression measuring a broad range of the elements constituting the clinical depressive syndrome.

Thus, basically following their approach, we construct three indices, namely the somatisation index, the anxiety index and the depression index. The somatisation index (*som*) consists of five questions asking about headaches, pains or pounding in the chest, nausea, trouble getting breath and a lump in the throat. As above, the four-point scale of distress ranged from never (1) to always (4). Thus, the index strongly resembles the physical index introduced above and ranges from 5 to 20 (α=0.72). Similarly, the anxiety index (*anx*) is somehow alike the psychological index. The index considers questions about restlessness, panic, being scared for no reason, feeling of being trapped or caught and irritability, again ranging from 5 to 20 (α=0.70). Finally, the depression index (*dep*) – following the symptoms of the clinical depressive syndrome – includes withdrawal of interest in activities, depression,

hopelessness, lack of interest and thoughts of ending the life. As it includes 5 questions, the index ranged from 5 to 20 ($\alpha$=0.79).

In addition to these six stress indices, we construct indices considering burnout symptoms and negative health outcomes. Our burnout index (*burn*) follows the approach of Kurtz (2008:225), taking into account three questions about burnout syndromes, namely feeling like an automatic pilot most times, feeling burned out from the job, and feeling like being at the end of the rope. The possible answers range from strongly disagree (1) to strongly agree (5) resulting in an index from 3 to 15 ($\alpha$=0.73). Our index of health outcomes (*health*), as opposed to the indices of psychological stress and anxiety, considers chronic health outcomes, including migraines, diabetes, chronic low back pain, high blood pressure, liver disease, foot problems, heart disease, reproductive problems and chronic insomnia. Possible answers of these questions were yes (1) or no (0). Thus, the index includes nine questions ranging from 0 to 9 ($\alpha$=0.56) with higher levels indicating higher levels of negative health outcomes.

By measuring stress and various aspects of stress by means of eight different indices, we are confident to cover a wide range of stress aspects as well as outcomes to shed some light on gender differences in perceived stress forms, outcomes and levels. Furthermore, through our various distinctions in the dependent variables certain conclusions can be drawn regarding various aspects and outcomes of stress, e.g., possible differences between psychological and physical stress outcomes. The following section explains our explanatory variables including our choice of control variables such as demographic variables and specific characteristics of the current position within the department.

*Independent variables*

To address our main research question, namely differences between genders in stress perceptions and outcomes, we construct a dummy variable (1 if female and 0 otherwise). As mentioned above, approximately 14% of the sample was female. To control for other influences, we also include a large set of explanatory and control variables in our regressions. First, we construct a narrow index measuring social capital at work by focusing on two specific questions in the survey, namely whether there is good and effective cooperation between units and trust in work partners. Possible answers range from strongly agree (1) to strongly disagree (5). 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.

Second, we construct two indices measuring fairness or justice aspects within the department. The first index (referred to as *individual fairness*) includes four questions, namely 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 range 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 individual fairness in the department. The second index measures institutional fairness, including also four questions, namely whether promotions in the department were tied to ability and merit, whether the administration supports officers who are in trouble, and whether female and male officers are treated in a same way. This index also ranges from 4 to 20 with higher values indicating a higher level of institutional fairness.

Third, we include the variable work-life balance into our regressions, namely whether employees are able to find a balanced way where they can manage their challenges both in the job and at home. 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" to "Strongly disagree". Thus, higher levels of the variable indicate a higher level of work-life balance (ranging from 1 to 5).

Moreover, we include strain into our regressions, which can be interpreted as an objective measure of stress or traumatic events at work, respectively. 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 range 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.

Finally, we construct an index on "stability at home" which included questions about reliability on support from the family, friends etc. and talking about problems with the spouse, relative or friend (He, Zhao and Archibold, 2002; Howard, Howard and Boles, 2004). For constructing the index, we had to recode the question about reliability on the family ("I

feel that I can rely on support from my family, friends etc."), as the answers originally ranged from strongly agree (1) to strongly disagree (5). On the contrary, the second question ("I talk with my spouse, relative or friend about problems") could be answered with never (1) to always (4). Therefore, we recoded the first question by putting the numbers upside down from strongly disagree (1) to strongly agree (5). Subsequently, we constructed an index ranging from 2 to 9.

Additionally, we added the number of years working for the department (referred to as *experience*), age, 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) and marital status (1 if married or live-in partner) as control variables.

## IV.     EMPIRICAL ANALYSIS

First of all, we simply compare the means of perceived stress levels between genders by applying a t-test whether the difference between genders is significant. The null hypothesis in all cases is that the difference of means between genders is 0. The means by gender, t-statistics as well as p-values are reported in Table 2. Remarkably, we find a very interesting pattern: female officers do not differ from their male counterparts in terms of perceived psychological stress levels (such as stress1, anxiety, depression and burnout), while they perceive significantly higher physical stress levels than men, as reported in our measures stress2, somatisation and even in the health index, which includes chronic negative health outcomes (He et al., 2002; O'Farrell, 1980; Stotland, 1991).

*(Table 2 about here)*

In a further step, we take a closer look at the data to check whether these highly significant differences are robust among subgroups in the sample or whether the differences are conditional on certain further characteristics such as experience, age, rank, race or perceived levels of social capital and fairness within the department. To take into account subgroups, we construct dummy variables that divide our sample in various manners. In the case of experience, we use a threshold of 10 years to divide our sample; 53% of the employees worked less than 10 years in the department, the rest had more experience. Similarly, we construct threshold dummies for age (1 if higher than 35 years and 0 otherwise, amounting to a cumulative percentage of 54% below the threshold), rank (1 if higher than officer and 0 otherwise, amounting to 63% below the threshold), social capital (1 if the social capital index is higher than 7 and 0 otherwise, 48% below threshold) and individual fairness (1 if the individual fairness index was higher than 13 and 0 otherwise, 52% below threshold). In all cases, we set the cut-off point close to the median in the sample to avoid large size differences in the compared subsamples. The t-statistics and corresponding p-values for differences in means between genders for our three measures of physical stress are reported in Tables 3 to 5. In other words, we divide the sample into two subsamples in each case, comparing the means between genders in each subsample (for example in the case of ethnic group, between Caucasians and Non-Caucasians) and testing for significant differences. As expected, in most cases the difference between females and males is also statistically significant in the subgroups, although the sample size of women partly gets considerably small. Nevertheless we observe some interesting patterns. The difference between genders in perceived physical stress levels converges as the employees get more experienced and older. In fact, no significant difference can be observed in the subgroup of employees of an age above 35 (holding true in all three cases) and with experience of more than 10 years (holding true in two cases, except for our measure of somatisation). On the other hand, we observe the

tendency that t-values, and the statistically significance (measuring gender differences), increases as social capital and perceived fairness increases (except for somatisation when looking at fairness). Regarding the ethnic group, the difference is only not statistically significant in the case of the health index when only considering white employees. Remarkably, even in cases where the difference between the corresponding subgroups is not statistically significant, the mean values of perceived physical stress levels are always higher among women. Overall, as shown in Tables 3 to 5, the gender differences are also robust even when using threshold dummies for various variables, including race, experience, age, rank, social capital, and individual fairness. More detailed, while the differences in the subgroups of the individual fairness threshold are always significant in all three indices, this holds true in two cases for the social capital threshold (stress2 and somatisation).

*(Tables 3-5 about here)*

Subsequently, we run several OLS regressions with our eight measures of stress as dependent variable to check whether we still observe gender specific effects once we control for further factors (see Table 6). Not surprisingly, taking into account the results reported in Table 2, the female dummy is highly statistically significant in four out of eight cases, including the physical and the combined stress index as well as the indices for somatisation and health. The significance in our combined stress measure (stress3) is expected, as the overall measure of stress also includes physical stress (stress2). Remarkably, when being statistically significant, the gender dummy was among the strongest effects within the whole regression when comparing standardized beta coefficients (ranging from 0.144 to 0.172). The R-squares of the regressions amounted to reasonable values between 0.19 and 0.32 indicating a satisfying goodness of fit. The number of observations in our regressions differs slightly as

there were some missing observations in the data when constructing our indices for stress. However, as the number of missing observations is quite low and the demographic characteristics of missing observations did not differ significantly, that is not assumed to be a major issue.

In our preliminary regressions, we have also considered various interaction terms, namely gender with race and marital status as well as gender with the threshold dummy variables (as explained above) of experience, age, social capital, individual fairness and ranking position within the department in the regressions. Thus, we wanted to control for certain interactive effects in our regressions. For this purpose, first of all, we included all interaction terms mentioned above into our regressions. However, in most of the cases, they turned out to be non-significant. Subsequently, we added single interaction terms to our estimations. However, the results were robust, while even the single interaction terms were not significant in most of the cases, with the exception of our burnout index, where the terms gender with social capital, fairness and race were significant. The interaction term work-life balance with gender was significant in the case of the indices of anxiety and depression. However, as we are focused on differences between gender in perceived stress levels, and thus, mainly in physical stress measures (stress2, somatisation and health), we exclude the interaction terms mentioned above from our following regressions. The non-significance of the interaction terms once again confirms the robust and stable differences between genders in all physical aspects of stress.

*(Table 6 about here)*

Regarding our control variables, the influence of social capital, stability at home and strain is highly statistically significant in all our regressions. The same applies to our

measurements of fairness (both individual as well as institutional). However, the linkage between fairness and perceived levels of stress becomes blurred in the measurements of physical stress. The coefficient work-life balance, measuring a considerable balance between times spent at work and at home, is also very significant in reducing stress levels in all cases. As we observed convergence of perceived stress levels between genders as people get older and more experienced, we also included squares of age and experience into our regressions. As expected, increasing age contributes to lower stress levels, whereas experience (years worked in the department) increases perceived stress levels, in both cases with diminishing returns. A higher rank tends to reduce stress level, albeit not always significant and of smaller magnitude. The dummy variable for being married and the number of children both (mostly) have the expected negative sign (reducing stress levels), but are not significant.

Subsequently, we take a closer look on the determinants of stress among female and male officers by dividing the sample by gender. Results of the two subsamples are shown in Table 5 for our three measures of physical stress, namely the indices stress2, somatisation and health.

*(Table 7 about here)*

Particularly, we want to see how strong environmental conditions within the job and outside the job affect a male's and a female's stress levels in those cases where we observe gender differences. Table 5 shows substantial differences between genders. While higher levels of social capital are statistically significantly correlated with lower levels of perceived physical stress for men, this is not the case for women. The pattern of our measures for fairness is similar. Although even for men the measures are not always significant, fairness do not play any role in perceived physical stress levels among women. In the case of women,

just three variables are of importance, namely work-life balance (twice significant), stability at home (twice significant) and strain (always significant). These results are highly interesting from a social science point of view. Police and law enforcement jobs are still labelled as typical "men's jobs" in society (Davidson and Cooper, 1992). Furthermore, like in our sample, women are a minority within the police force. In this context, better networks, trust and cooperation at work are apparently not able to absorb higher levels of physical stress, or in other words, are not appropriate to reduce physical stress levels. As women still have to defend and justify their position in policing jobs, they probably do not find the same support like men within the police force. Thus, strain which covers traumatic experiences in the job and, therefore, a more objective measure of stress, is transformed directly to perceived physical stress levels, whereas social capital and fairness at work lead to lower levels of stress in the case of men. On the other hand, all variables that measure support at home as well as the time spent with the chores at home (work-life balance and stability at home index) are still important factors to reduce perceived stress levels for women. Thus, while women do not have to defend their job to their families and, therefore, benefit from higher (emotional) support in the family environment from home this is not the case for social capital and fairness at work which do not have any impact on perceived physical stress levels among female police officers.

## V. CONCLUSIONS

The aim of this paper was to investigate the effect of gender differences on the impact of stress within police officers working under physically and emotionally demanding conditions. Many of the stresses observed within this environment are common to other workplaces (e.g., shift work, excessive overtime, heavy workload, poor working conditions and strong interaction with the public). However, police workers can also encounter traumatic

events like physical or life threatening danger and are exposed to more disturbing events in general. These events impact upon male and female officers in different ways and to varying degrees. Unlike previous investigations to gender variations of the effects of stress we have included not only demographic variables, but many mitigation factors measure the environmental situation at work and at home with factors such as effective cooperation between units, trust in the work partner, a work-life-balance and home stability, and interactional fairness. Additionally, we have separated the stress variables into different categories to further examine gender differences. Interestingly, we observe that female officers report a higher level physical stress (covering also somatisation and overall health), but no significant difference were found between males and females concerning psychological stress. Furthermore, stress mitigation factors overall like social capital, and perceptions of fairness (individual) are not significant factors in reducing physical stress among female officers while these factors affect male officers. Only work-life balance and home stability show the tendency to be statistically significant for both gender groups.

This implies important policy implications for stress-reducing programs among female police officers with the aim of reducing also gender gaps. Such programs should focus on overcoming stereotypes about job profiles and on allowing a reasonable work-life balance so that police officers find a sane balance between their tasks, both at home and in the job. Alternatively, one may suggest to increase the share of female police officers to reduce minority effects. However, to explore such a policy implication would require the use of panel data. Focusing on building trust and social interactions might not be enough for minorities. Previous literature would indicate that demographic factors play an important part in female stress allocation (Etzion, 1984; He et al., 2002; Jones and Fletcher, 1993; Morash and Haarr, 1995; Silbert, 1982). However, among the stress types that are relevant for gender differences, none of the demographic factors were significant in either increasing or

decreasing stress in our sample focusing on police office. One may stress it is difficult to generalize such results to other job environments. We may have a selection bias. Females who work in highly stress-related and male dominant environment have a different personality and attitudinal profile. However, our finding suggests that the environment within which female police officers operate have significantly hindered their stress coping abilities. Tokenism and low levels of fairness (justice) appear to be driving causes of female stress. Minority problems seemed to be visible. Such problems need to be addressed in order to make female officers able to effectively reduce stress levels similar to that of their male colleagues.

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# VII. APPENDIX AND TABLES

## Table 1: Descriptive Statistics

| Variable | | count | percent | n | Mean | $\sigma^2$ | Min | Max |
|---|---|---|---|---|---|---|---|---|
| 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/above | 59 | 5.36% | | | | | |
| Marital status | Married | 658 | 59.87% | 1,099 | | | | |
| | Live-in partner | 88 | 8.01% | | | | | |
| | Divorced/Separat | 135 | 12.28% | | | | | |
| | Single | 213 | 19.38% | | | | | |
| | Widowed | 5 | 0.45% | | | | | |
| Age | | | | 1,081 | 36.04 | 9.09 | 20 | 66 |
| Experience | | | | 1,078 | 11.52 | 9.28 | 0 | 44 |
| Children | | | | 1,090 | 1.18 | 1.16 | 0 | 7 |
| Stress1 | | | | 1,064 | 10.57 | 3.02 | 7 | 28 |
| Stress2 | | | | 1,086 | 6.61 | 1.84 | 5 | 20 |
| Stress3 | | | | 1,060 | 17.18 | 4.36 | 12 | 48 |
| Somatisation | | | | 1,087 | 7.05 | 2.01 | 5 | 20 |
| Anxiety | | | | 1,074 | 6.82 | 1.81 | 5 | 20 |
| Depression | | | | 1,067 | 7.24 | 2.18 | 5 | 20 |
| Burnout | | | | 1,092 | 7.91 | 2.56 | 3 | 15 |
| Health | | | | 1,104 | 1.18 | 1.35 | 0 | 9 |
| Social Capital Index | | | | 1,075 | 7.19 | 1.60 | 2 | 10 |
| Individual Fairness Index | | | | 1,065 | 13.00 | 3.20 | 4 | 20 |
| Institutional Fairness Index | | | | 1,068 | 10.96 | 2.34 | 4 | 20 |
| Work-Life Balance | | | | 1,090 | 2.50 | 1.12 | 1 | 5 |
| Home Index | | | | 1,078 | 6.60 | 1.41 | 2 | 9 |
| Strain Index | | | | 1,077 | 11.98 | 5.79 | 0 | 27 |

## Table 2: Comparison of means between females and males

| Variable | Stress1 | Stress2 | Stress3 | Som | Anx | Dep | Burnout | Health |
|---|---|---|---|---|---|---|---|---|
| Male | 10.573 | 6.527 | 17.102 | 6.939 | 6.806 | 7.246 | 7.944 | 1.128 |
| Female | 10.573 | 7.138 | 17.660 | 7.725 | 6.900 | 7.230 | 7.756 | 1.497 |
| t-statistic | 0.000 | -3.827 | -1.437 | -4.533 | -0.590 | 0.084 | 0.849 | -3.188 |
| p-value | 0.999 | 0.000*** | 0.151 | 0.000*** | 0.555 | 0.933 | 0.396 | 0.001*** |

*Notes: Values in the rows "Male" and "Female" report means of the variable in the subsample. T-statistics and p-values are reported for the Null Hypothesis that the difference between means of the groups is zero.*
*Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.*

## Table 3: Comparisons of means by subgroups between females and males: Stress2

| | | Stress2 | | | |
|---|---|---|---|---|---|
| | | Mean Male | Mean Female | t-statistic | p-value |
| Caucasian Dummy | 1 | 6.641 | 7.204 | -2.141 | 0.033*** |
| (1 if Caucasian) | 0 | 6.279 | 7.107 | -3.804 | 0.000*** |
| Experience Dummy | 1 | 6.793 | 7.200 | -1.575 | 0.116 |
| (1 if experience > 10 yrs) | 0 | 6.278 | 7.098 | -4.116 | 0.000*** |
| Social Capital Dummy | 1 | 6.218 | 6.887 | -3.476 | 0.000*** |
| (1 if social capital > 7) | 0 | 6.858 | 7.417 | -2.203 | 0.028** |
| Fairness Dummy | 1 | 6.271 | 6.882 | -2.845 | 0.005*** |
| (1 if fairness > 13) | 0 | 6.763 | 7.345 | -2.534 | 0.012** |
| Rank Dummy | 1 | 6.648 | 7.068 | -1.661 | 0.097* |
| (1 if rank > officer) | 0 | 6.457 | 7.183 | -3.526 | 0.000*** |
| Age Dummy | 1 | 6.750 | 7.085 | -1.298 | 0.195 |
| (1 if age > 35 years) | 0 | 6.327 | 7.172 | -4.199 | 0.000*** |

*Notes: T-statistics and p-values are reported for the Null Hypothesis that the difference between means of the subgroups is zero. Significance levels: * 0.05 < p < 0.10, ** 0.01< p < 0.05, *** p < 0.01.*


## Table 4: Comparisons of means by subgroups between females and males: Somatisation

| | | Somatisation | | | |
|---|---|---|---|---|---|
| | | Mean Male | Mean Female | t-statistic | p-value |
| Caucasian Dummy | 1 | 7.094 | 7.880 | -2.778 | 0.006*** |
| (1 if Caucasian) | 0 | 6.602 | 7.650 | -4.427 | 0.000*** |
| Experience Dummy | 1 | 7.156 | 7.803 | -2.404 | 0.012** |
| (1 if experience > 10 yrs) | 0 | 6.737 | 7.674 | -4.145 | 0.000*** |
| Social Capital Dummy | 1 | 6.604 | 7.437 | -3.910 | 0.000*** |
| (1 if social capital > 7) | 0 | 7.298 | 8.041 | -2.737 | 0.006*** |
| Fairness Dummy | 1 | 6.629 | 7.309 | -2.802 | 0.005*** |
| (1 if fairness > 13) | 0 | 7.225 | 8.059 | -3.453 | 0.001*** |
| Rank Dummy | 1 | 7.056 | 7.650 | -2.203 | 0.028** |
| (1 if rank > officer) | 0 | 6.871 | 7.774 | -3.996 | 0.000*** |
| Age Dummy | 1 | 7.102 | 7.533 | -1.595 | 0.111 |
| (1 if age > 35 years) | 0 | 6.792 | 7.849 | -4.666 | 0.000*** |

*Notes: T-statistics and p-values are reported for the Null Hypothesis that the difference between means of the subgroups is zero. Significance levels: * 0.05 < p < 0.10, ** 0.01< p < 0.05, *** p < 0.01.*


## Table 5: Comparisons of means by subgroups between females and males: Health

| | | Health | | | |
|---|---|---|---|---|---|
| | | Mean Male | Mean Female | t-statistic | p-value |
| Caucasian Dummy | 1 | 1.227 | 1.529 | -1.547 | 0.122 |
| (1 if Caucasian) | 0 | 0.917 | 1.481 | -3.781 | 0.000*** |
| Experience Dummy | 1 | 1.417 | 1.698 | -1.442 | 0.150 |
| (1 if experience > 10 yrs) | 0 | 0.858 | 1.362 | -3.790 | 0.000*** |
| Social Capital Dummy | 1 | 0.914 | 1.432 | -3.558 | 0.000*** |
| (1 if social capital > 7) | 0 | 1.357 | 1.566 | -1.171 | 0.242 |
| Fairness Dummy | 1 | 0.916 | 1.380 | -2.840 | 0.005*** |
| (1 if fairness > 13) | 0 | 1.323 | 1.593 | -1.686 | 0.092* |
| Rank Dummy | 1 | 1.343 | 1.714 | -1.881 | 0.061* |
| (1 if rank > officer) | 0 | 1.005 | 1.351 | -2.467 | 0.014** |
| Age Dummy | 1 | 1.412 | 1.619 | -1.068 | 0.286 |
| (1 if age > 35 years) | 0 | 0.875 | 1.415 | -3.977 | 0.000*** |

*Notes: T-statistics and p-values are reported for the Null Hypothesis that the difference between means of the subgroups is zero. Significance levels: * 0.05 < p < 0.10, ** 0.01< p < 0.05, *** p < 0.01.*

## Table 6: Regression analysis with different stress measures

| Dep. Var. | stress1 | stress2 | stress3 | som | anx | dep | burn | health |
|---|---|---|---|---|---|---|---|---|
| Dummy Female | 0.393 | 0.805*** | 1.151*** | 1.006*** | 0.255 | 0.225 | -0.033 | 0.563*** |
| | (1.497) | (4.076) | (2.899) | (4.957) | (1.568) | (1.173) | (-0.167) | (4.487) |
| | *0.045* | *0.151\*\*\** | *0.090\*\*\** | *0.172\*\*\** | *0.048* | *0.036* | *-0.005* | *0.144\*\*\** |
| Social Capital Index | -0.355*** | -0.196*** | -0.562*** | -0.191*** | -0.166*** | -0.264*** | -0.299*** | -0.083*** |
| | (-5.441) | (-4.623) | (-6.015) | (-4.178) | (-4.179) | (-5.325) | (-6.002) | (-2.798) |
| | *-0.186\*\*\** | *-0.170\*\*\** | *-0.204\*\*\** | *-0.151\*\*\** | *-0.146\*\*\** | *-0.193\*\*\** | *-0.186\*\*\** | *-0.097\*\*\** |
| Individual Fairness Index | -0.100*** | -0.033 | -0.132*** | -0.042* | -0.043** | -0.071*** | -0.169*** | -0.02 |
| | (-3.168) | (-1.640) | (-2.939) | (-1.835) | (-2.056) | (-3.234) | (-6.463) | (-1.392) |
| | *-0.107\*\*\** | *-0.057* | *-0.098\*\*\** | *-0.067\** | *-0.076\*\** | *-0.105\*\*\** | *-0.213\*\*\** | *-0.047* |
| Institutional Fairness Index | -0.142*** | -0.003 | -0.150** | -0.017 | -0.078*** | -0.094*** | -0.111*** | -0.036* |
| | (-3.059) | (-0.110) | (-2.165) | (-0.519) | (-2.693) | (-2.848) | (-2.999) | (-1.716) |
| | *-0.108\*\*\** | *-0.004* | *-0.079\*\** | *-0.019* | *-0.100\*\*\** | *-0.100\*\*\** | *-0.100\*\*\** | *-0.061\** |
| Work-Life Balance | -0.385*** | -0.165*** | -0.548*** | -0.227*** | -0.194*** | -0.274*** | -0.371*** | -0.136*** |
| | (-4.526) | (-3.125) | (-4.494) | (-3.877) | (-3.677) | (-4.528) | (-5.412) | (-3.496) |
| | *-0.141\*\*\** | *-0.099\*\*\** | *-0.140\*\*\** | *-0.126\*\*\** | *-0.119\*\*\** | *-0.140\*\*\** | *-0.162\*\*\** | *-0.112\*\*\** |
| Children | -0.061 | 0.026 | -0.052 | 0.003 | -0.05 | -0.022 | -0.077 | -0.044 |
| | (-0.753) | (0.504) | (-0.453) | (0.062) | (-1.002) | (-0.371) | (-1.149) | (-1.211) |
| | *-0.023* | *0.016* | *-0.014* | *0.002* | *-0.032* | *-0.012* | *-0.035* | *-0.038* |
| Rank | -0.154* | -0.06 | -0.220* | -0.066 | -0.043 | -0.136** | -0.280*** | 0.025 |
| | (-1.866) | (-1.064) | (-1.782) | (-1.114) | (-0.788) | (-2.208) | (-4.343) | (0.629) |
| | *-0.072\** | *-0.046* | *-0.071\** | *-0.046* | *-0.033* | *-0.088\*\** | *-0.155\*\*\** | *0.026* |
| Experience | 0.087** | 0.051* | 0.141** | 0.045 | 0.027 | 0.072** | 0.102*** | -0.018 |
| | (2.133) | (1.919) | (2.473) | (1.544) | (1.119) | (2.400) | (2.633) | (-0.903) |
| | *0.267\*\** | *0.257\** | *0.299\*\** | *0.209* | *0.138* | *0.307\*\** | *0.370\*\*\** | *-0.124* |
| Experience^2 | -0.003** | -0.001 | -0.004** | -0.001 | -0.001 | -0.002* | -0.003*** | 0.001* |
| | (-2.015) | (-1.306) | (-2.066) | (-0.990) | (-1.092) | (-1.840) | (-2.592) | (1.694) |
| | *-0.248\*\** | *-0.179* | *-0.255\*\** | *-0.134* | *-0.141* | *-0.233\** | *-0.379\*\*\** | *0.246\** |
| Age | -0.205** | -0.137** | -0.340** | -0.099 | -0.059 | -0.154** | -0.251*** | 0.046 |
| | (-2.040) | (-2.037) | (-2.342) | (-1.360) | (-0.968) | (-2.078) | (-2.880) | (0.925) |
| | *-0.614\*\** | *-0.674\*\** | *-0.708\*\** | *-0.445* | *-0.294* | *-0.636\*\** | *-0.890\*\*\** | *0.311* |
| Age^2 | 0.002* | 0.002* | 0.004** | 0.001 | 0.001 | 0.002* | 0.003*** | -0.001 |
| | (1.730) | (1.741) | (1.998) | (0.995) | (0.669) | (1.765) | (2.635) | (-0.816) |
| | *0.545\** | *0.609\** | *0.637\*\** | *0.338* | *0.216* | *0.565\** | *0.861\*\*\** | *-0.299* |
| Dummy Caucasian | 0.564*** | 0.079 | 0.652** | 0.175 | 0.204 | 0.163 | -0.138 | -0.065 |
| | (2.755) | (0.583) | (2.139) | (1.173) | (1.522) | (1.107) | (-0.903) | (-0.704) |
| | *0.089\*\*\** | *0.02* | *0.071\*\** | *0.041* | *0.054* | *0.036* | *-0.026* | *-0.023* |
| Dummy Marital Status | -0.081 | 0.056 | -0.036 | -0.028 | -0.099 | -0.101 | -0.015 | -0.079 |
| | (-0.385) | (0.410) | (-0.116) | (-0.189) | (-0.760) | (-0.644) | (-0.089) | (-0.813) |
| | *-0.012* | *0.014* | *-0.004* | *-0.007* | *-0.026* | *-0.022* | *-0.003* | *-0.027* |
| Home Index | -0.372*** | -0.193*** | -0.569*** | -0.174*** | -0.242*** | -0.257*** | -0.290*** | -0.111*** |
| | (-4.728) | (-4.120) | (-5.069) | (-3.583) | (-4.932) | (-4.508) | (-5.611) | (-3.474) |
| | *-0.173\*\*\** | *-0.148\*\*\** | *-0.184\*\*\** | *-0.122\*\*\** | *-0.188\*\*\** | *-0.166\*\*\** | *-0.160\*\*\** | *-0.116\*\*\** |
| Strain Index | 0.118*** | 0.068*** | 0.184*** | 0.079*** | 0.072*** | 0.072*** | 0.089*** | 0.056*** |
| | (6.167) | (5.423) | (6.607) | (5.904) | (5.768) | (5.340) | (5.647) | (6.337) |
| | *0.222\*\*\** | *0.210\*\*\** | *0.241\*\*\** | *0.223\*\*\** | *0.226\*\*\** | *0.188\*\*\** | *0.198\*\*\** | *0.235\*\*\** |
| Constant | 21.896*** | 11.724*** | 33.740*** | 11.818*** | 11.955*** | 15.665*** | 20.563*** | 1.907** |
| | (10.632) | (8.350) | (10.965) | (7.996) | (9.159) | (10.208) | (12.890) | (2.026) |
| R-Squared | 0.277 | 0.185 | 0.29 | 0.191 | 0.221 | 0.253 | 0.323 | 0.213 |
| F-statistics | 20.598*** | 13.193*** | 21.968*** | 13.561*** | 13.407*** | 17.892*** | 32.693*** | 18.572*** |
| N | 943 | 957 | 940 | 958 | 948 | 944 | 961 | 963 |

*Notes: t-statistics in parentheses. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01. Regressions with robust standard errors, beta coefficients are reported in bold italic below.*

## Table 7: Physical stress measures, divided by gender

| Dep. Var. | Stress 2 | | Somatisation | | Health | |
|---|---|---|---|---|---|---|
| Subgroup | Female | Male | Female | Male | Female | Male |
| Social Capital Index | -0.215 | -0.192*** | -0.199 | -0.191*** | -0.106 | -0.081** |
| | (-1.459) | (-4.330) | (-1.217) | (-4.054) | (-1.279) | (-2.550) |
| | -0.146 | -0.176*** | -0.130 | -0.159*** | -0.112 | -0.098** |
| Individual Fairness Index | 0.017 | -0.038* | -0.009 | -0.044* | 0.013 | -0.024 |
| | (0.267) | (-1.809) | (-0.128) | (-1.773) | (0.375) | (-1.570) |
| | 0.024 | -0.070* | -0.012 | -0.072* | 0.03 | -0.058 |
| Institutional Fairness Index | -0.078 | 0.001 | -0.095 | -0.016 | -0.041 | -0.042* |
| | (-0.738) | (0.049) | (-0.909) | (-0.481) | (-0.664) | (-1.914) |
| | -0.074 | 0.002 | -0.087 | -0.019 | -0.06 | -0.074* |
| Work-Life Balance | -0.269 | -0.146*** | -0.325* | -0.208*** | -0.264** | -0.110*** |
| | (-1.603) | (-2.649) | (-1.872) | (-3.321) | (-2.445) | (-2.659) |
| | -0.139 | -0.092*** | -0.162* | -0.119*** | -0.214** | -0.091*** |
| Children | -0.082 | 0.039 | -0.044 | 0.007 | -0.086 | -0.042 |
| | (-0.436) | (0.703) | (-0.272) | (0.117) | (-0.909) | (-1.028) |
| | -0.044 | 0.025 | -0.023 | 0.004 | -0.072 | -0.036 |
| Rank | -0.253 | -0.032 | -0.316 | -0.027 | -0.01 | 0.036 |
| | (-1.311) | (-0.543) | (-1.569) | (-0.429) | (-0.076) | (0.850) |
| | -0.145 | -0.026 | -0.174 | -0.02 | -0.009 | 0.039 |
| Experience | 0.193 | 0.04 | 0.173 | 0.025 | 0.085 | -0.026 |
| | (1.652) | (1.421) | (1.589) | (0.804) | (1.246) | (-1.205) |
| | 0.504 | 0.219 | 0.444 | 0.126 | 0.352 | -0.186 |
| Experience^2 | -0.006 | -0.001 | -0.003 | -0.001 | -0.003 | 0.001* |
| | (-1.169) | (-1.128) | (-0.645) | (-0.776) | (-1.126) | (1.913) |
| | -0.332 | -0.182 | -0.159 | -0.124 | -0.314 | 0.307* |
| Age | 0.13 | -0.155** | 0.154 | -0.108 | 0.218 | 0.032 |
| | (0.563) | (-2.182) | (0.697) | (-1.375) | (1.418) | (0.606) |
| | 0.407 | -0.826** | 0.466 | -0.521 | 1.060 | 0.224 |
| Age^2 | -0.002 | 0.002* | -0.003 | 0.001 | -0.003 | -0.000 |
| | (-0.757) | (1.962) | (-1.056) | (1.178) | (-1.195) | (-0.545) |
| | -0.526 | 0.793* | -0.674 | 0.468 | -0.958 | -0.220 |
| Dummy Caucasian | -0.349 | 0.139 | -0.32 | 0.247 | -0.418 | -0.006 |
| | (-0.789) | (0.982) | (-0.695) | (1.568) | (-1.530) | (-0.063) |
| | -0.075 | 0.037 | -0.066 | 0.059 | -0.14 | -0.002 |
| Dummy Marital Status | 0.166 | 0.043 | 0.071 | -0.034 | -0.188 | -0.043 |
| | (0.394) | (0.295) | (0.165) | (-0.206) | (-0.739) | (-0.402) |
| | 0.037 | 0.011 | 0.015 | -0.008 | -0.065 | -0.015 |
| Home Index | -0.165 | -0.203*** | -0.203* | -0.174*** | -0.193** | -0.099*** |
| | (-1.455) | (-3.996) | (-1.726) | (-3.283) | (-2.390) | (-2.869) |
| | -0.113 | -0.161*** | -0.133* | -0.125*** | -0.205** | -0.104*** |
| Strain Index | 0.078* | 0.066*** | 0.083** | 0.078*** | 0.043 | 0.056*** |
| | (1.945) | (4.974) | (2.073) | (5.488) | (1.539) | (6.147) |
| | 0.183* | 0.216*** | 0.187** | 0.232*** | 0.156 | 0.244*** |
| Constant | 8.583** | 11.978*** | 10.028** | 11.786*** | 0.024 | 2.103** |
| | (1.989) | (8.060) | (2.403) | (7.442) | (0.009) | (2.109) |
| R-Squared | 0.175 | 0.183 | 0.222 | 0.172 | 0.237 | 0.209 |
| F-statistics | 2.005** | 12.043*** | 3.056*** | 11.199*** | 3.452*** | 16.250*** |
| N | 130 | 825 | 131 | 825 | 132 | 829 |

*Notes: t-statistics in parentheses. Significance levels: * 0.05 < p < 0.10, ** 0.01< p < 0.05, *** p < 0.01. Regressions with robust standard errors, beta coefficients are reported in bold italic below.*