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TranState Working Papers

The effect of reciprocal motives, personality traits and wage differences on public employees' job satisfaction

Markus Tepe

No. 131

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Universität Bremen
Sonderforschungsbereich 597 / Collaborative Research Center 597
Staatlichkeit im Wandel / Transformations of the State
Postfach 33 04 40
D - 28334 Bremen
Tel.:+ 49 421 218-8720
Fax:+ 49 421 218-8721
Homepage: http://www.staatlichkeit.uni-bremen.de

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The effect of reciprocal motives, personality traits and wage differences on public employees' job satisfaction

ABSTRACT

This study explores the determinants of public employees' job satisfaction. We are focusing on three concepts – reciprocal motives, personality traits and wage differences – to explain job satisfaction and production sector affiliation. Estimation results obtained from multivariate analyses on individual level data from the German Socio-economic Panel Study (GSOEP) can be summarized in three points: First, in contrast to reciprocal motives, personality traits have a unique and direct effect on public and private sector employees' job satisfaction. Second, even though we cannot proof that public employees at the high-end of the earnings distribution trade a loss in pecuniary benefits against an increase in non-pecuniary benefits, the empirical analysis strongly supports the notion that public employees' job satisfaction function varies across the earnings distribution. Finally, public employees' personal characteristics can be associated with lower levels of negative reciprocity, conscientiousness and neuroticism, pointing out to a potential self-selection and recruitment bias in the public sector.

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The effect of reciprocal motives, personality traits and wage differences on public employees' job satisfaction[1]

1. MOTIVATION

In the wake of the financial crisis, the re-organization of public employment has become a major theme in austerity packages all around Western nations. The German government announced to reduce public salaries by 2.5% in 2011 combined with a reduction of permanent jobs in the public administration by 5.4% in the next four years (BMF 2010). How do those who remain employed by the state respond to these changes? Does a reduction in salaries or an aggravation of working conditions affect their work attitude? Could it even lead to a decline in the quality of public service provisions? More generally, offering employment benefit packages that are able to attract, motivate and satisfy qualified personnel will become a matter of growing relevance for public sector recruitment policies in the near future. A large proportion of the public workforce is predicted to retire over a relatively short period of time (OECD 2009: 72). If the state aims to deliver public services of quality at the same level, this will require an increase in public sector labor demand. These are just two issues currently raised in public sector modernization. In order to understand how public employees respond to changes in their work benefit packages, we first of all need to know what determines their job satisfaction.

Exploring differences in the determinants of job satisfaction among public and private sector employees is a classical theme in the public administration literature (e.g. see DeSantis and Durst 1996 for review). This study aims to elaborate on this literature in three ways: First, we introduce reciprocal motives and personality traits into the job satisfaction function and explore the impact of these explanatory concepts between the two groups of employees. Second, we test if public and private sector employees' job satisfaction function varies across the earnings distribution. Prior studies on public/private sector pay differences (e.g. Tepe and Kroos 2010; Melly 2005 for Germany) indicate that public employees at the low-end of the earnings distribution earn more than their private sector counterparts, whereas public employees at the high-end earn less than private sector employees of otherwise similar backgrounds. Given this pattern of pay re-distribution within the public sector, we expect that public employees at the

[1] Acknowledgements: The author wants to thank two anonymous reviewers and the participants of the Workshop "The Transformation of the State as Employer" held in Bremen in July 2010 for their thorough comments and discussion. The dataset and Stata command files are available for replication purposes.

high-end of the earnings distribution accept lower earnings because they value non-pecuniary over pecuniary work benefits. Finally, we account for the possibility that systematic differences in public/private sector employees' job satisfaction function stem from a self-section and recruitment bias in the public sector. The person-environment-fit literature suggests that the public sector attracts employees with distinct working attitudes (Leisink and Steijn 2008: 120). To this end, we investigate the effect of reciprocal motivation and personality traits on employees' sector affiliation.

To test these ideas, the empirical analysis relies on individual level data from the German Socio-economic Panel Study (GSOEP) 2005. Results of the multivariate analysis can be summarized in three points: First, in contrast to reciprocal motives, personality traits have a unique and direct effect on public and private sector employees' job satisfaction. Second, even though we cannot proof that public employees at the high-end of the earnings distribution trade a loss in pecuniary benefits against an increase in non-pecuniary benefits, the empirical analysis strongly supports the notion that public employees' job satisfaction function varies across the earnings distribution. Finally, public employees' personal characteristics can be associated with lower levels of negative reciprocity, conscientiousness and neuroticism, pointing out to a potential self-selection and recruitment bias in the public sector.

The remainder of this article proceeds as follows: In the next section we conceptualize a refined and testable framework on public employees' job satisfaction. Section three describes the data, methods and variables. Section four presents descriptive associations and results from the multivariate regression analysis. The last section summarizes our findings and discusses its implication in the context of Human Resource Management (HRM) reforms in public sector modernization.

2. THEORY AND HYPOTHESES

There are four bodies of knowledge that are of help to understand differences in job satisfaction among public and private sector employees: (1) the literature on job satisfaction functions, (2) the literature on public/private sector wage differences, (3) research on personality traits and (4) reciprocal motives in human cooperation.

2.1 Job Satisfaction among Public and Private Sector Employees

Exploring the differences in public and private sector employees' job satisfaction is a classical topic in public administration research (Bergmann, Bergmann and Grahn 1994; Blackburn and Bruce 1989; Carell and Elbert 1974; Emmert and Taher 1992; Taylor and Vest 1992; Maidani 1991). Building on the work of DeSantis and Durst (1996) we distinguish three conceptual categories that constitute the job satisfaction function: (1)

pecuniary- and non-pecuniary rewards, (2) job characteristics, (3) socio-demographic characteristics and (4) the employees' personal characteristics.

First, external rewards are considered to be of crucial importance to attain job satisfaction among workers (DeSantis and Durst 1996: 328). Besides salaries as the main pecuniary work benefit (Schwab and Wallace, 1974; Kalleberg 1977) non-pecuniary rewards such as job security and promotion opportunities seem to be equally relevant. Voydanoff (1980) finds that promotion possibilities have a significant impact on employees' job satisfaction. Rainville's (1977) analysis of job satisfaction among manufacturing workers confirms that a higher sense of job security corresponds with higher job satisfaction. Pecuniary and non-pecuniary work benefits are therefore considered as the first explanatory category in any job satisfaction function. Second, even though the distinction between non-pecuniary rewards and job characteristics is sometimes arbitrary, the latter category focuses on the actual arrangement of the work situation. It thereby refers to the employees' skills and abilities on the one hand and the features of the employment organization on the other. Employees are generally presumed to be more satisfied with their jobs if the job requirements are consistent with their talents, knowledge, and abilities (Hackman and Lawler 1971). Moreover, fringe benefits such as work holidays have been considered as relevant components of the job satisfaction function (Bergmann, Bergmann, and Grahn 1994). Third, socio-demographic characteristics such as gender (Martin and Hanson 1985; Mannheim 1983; Mottaz, 1986), age (Lee and Wilbur 1985), and educational attainment (Carrell and Elbert 1974) have been identified to influence job satisfaction (DeSantis and Durst 1996: 329ff).[2]

Expanding on DeSantis and Durst's (1996) framework we add a fourth category to explain differences in public and private sector employees' job satisfaction function: reciprocal motives and personality traits. There is growing evidence from experimental research that the "homo economicus" model fails to explain patterns of human cooperation (Bowles and Gintis 2003; Falk and Fischbacher, 2006; Cox et al. 2007, Cox et al. 2008). In contrast, reciprocal motives seem to shape human behavior in situations of strategic cooperation. Reciprocity refers to a social norm that predicts an in-kind response to friendly or hostile acts (Dohmen, Falk, Huffman and Sunde 2009: 592). Dohmen et al. (2009: 592) distinguish two types of reciprocal behavior: positive reciprocity describes the degree to which an individual rewards kind actions, whereas negative reciprocity describes the extent to which someone punishes unkind actions. Positive

[2] DeSantis and Durst (1996) account for a fourth category described as work environment The work environment is defined as those factors that assist or hinder employees from performing their work tasks (e.g. the relationship with coworkers and supervisors). Unfortunately, the SOEP 2005 contains no items that would allow us to operationalize this category of job satisfaction.

reciprocity has been used to explain why people reward trust, whereas negative reciprocity has been considered to determine the willingness to punish those who violate norms of cooperation and fairness (Dohmen et al. 2009: 592). Using the GSOEP 2005 survey instruments on reciprocity, Dohmen et al. (2009) show that positive reciprocity is positively associated with overtime work, the number of friends and overall life satisfaction.

A few scholars in management and administration science have considered the role of social capital for employees' job performance (Leana and Van Buren 1999, Pierce, Sarason and Sarason 1990). Vigoda-Gadot and Talmud (2010) argue that higher levels of mutual trust predict higher levels of job satisfaction and organizational commitment (Vigoda-Gadot and Talmud 2010: 9). Considering reciprocal motives as one aspect of social capital, they suggest two mechanisms why reciprocity should be positively related with job performance (Vigoda-Gadot and Talmud 2010: 11). First, they expect individuals with higher levels of reciprocity to feel more confident that they have a shield against the domination of influential others (Vigoda-Gadot and Talmud 2010: 10). Second, employees with higher levels of reciprocity could to be more likely to learn about opportunities for advancement and self-fulfillment in the workplace.

In contrast to reciprocity, which describes a social norm in human cooperation, personality traits are considered as consistent patterns of thought, feelings and actions (McCrae and Costa 1990: 23). The dominant approach to represent differences in personality traits is the Big Five concept (John and Srivastava 1999: 103). It asserts that differences in human personality can be measured on five dimensions: neuroticism, openness to experience, extraversion, agreeableness, and conscientiousness. Roccas et al. (2002: 792) define the five traits as follows:

> *"Individuals who score high on extraversion tend to be sociable, talkative, assertive, and active; those who score low tend to be retiring, reserved and cautious. Individuals who score high on agreeableness tend to be good-natured, compliant, modest, gentle and cooperative. Individuals who score low on this dimension tend to be irritable, ruthless, suspicious, and inflexible. Individuals who score high on openness tend to be intellectual, imaginative, sensitive and open-minded. Those who score low tend to be down-to-earth, insensitive, and conventional. Individuals scoring high on conscientiousness tend to be careful, thorough, responsible, organized and scrupulous. Those who score low on this dimension tend to be irresponsible, disorganized and unscrupulous. Individuals scoring high on neuroticism tend to be anxious, depressed, angry and insecure. Those scoring low on neuroticism tend to be calm, poised, and emotionally stable."*

Watson (2000) provides a theoretical framework that links personality traits to job satisfaction. It suggests that personality traits influence the probability with which individuals make certain experiences. To this end, he distinguishes individuals with high positive affectivity, which are predisposed to experience positive emotionality, and individuals with negative affectivity, which are predisposed to experience negative emotions (Watson, Clark, and Tellegen, 1988). According to these considerations the relationship between personality traits and job satisfaction has been predicted as follows (Judge and Mount 2002: 531ff): Neurotic individuals are presumed to experience less job satisfaction because they select themselves into situations that foster negative emotions. Extraverts are predisposed to experience positive emotions and are therefore more likely to hold higher job satisfaction. There is no directional relationship between openness and job satisfaction as openness is presumed to make individuals feel good and bad experiences more deeply. Agreeableness is predicted to lead to higher job satisfaction since agreeable individuals have a greater motivation to achieve interpersonal intimacy. Finally, conscientiousness is presumed to cause higher job satisfaction because conscientiousness increases the likelihood to obtain satisfying work rewards.

2.2 Job Satisfaction across the Income Distribution

Prior research on wage differences between public and private sector employees of otherwise similar backgrounds suggest that public employees at the low-end of the earnings distribution earn more than their private sector counterpart, whereas those public employees at the high-end of the earnings distribution earn less than private sector employees (Tepe and Kroos 2010; Ghinetti and Lucifora 2008; Melly 2005; Gornick and Jacobs 1998; Disney and Gosling 1998). The positive wage differential at the low-end of the earnings distribution provides a strong incentive to choose public sector employment. At the high-end of the earnings distribution, however, public sector employment seems to be highly unattractive as the same person could earn more in the private sector. So, why do public employees at the high-end of the earnings distribution accept lower earnings than their private sector counterparts?

In order to understand differences in public and private sector employees' job satisfaction function, we suppose it is important to take into account the shape of public/private sector wage differentials. Compared to the private sector, there are many cases in which public employment contracts provide a higher degree of job security coupled with a career path that offers continuous promotion opportunities. We therefore expect that public employees at the high-end of the earnings distribution accept lower earnings compared to their private sector counterparts because they value such non-pecuniary benefits over pecuniary work benefits. Public employees at the high-end of the earnings distribution are predicted to trade a loss in earnings to achieve higher levels

of job security and promotion opportunities in return. If this is the case, non-pecuniary rewards should be more important determinants of public sector employees' job satisfaction if we move up the earnings distribution.

2.3 Job Satisfaction and Person-Environment-Fit

Thus far, we presumed that personality traits and reciprocity exert a direct effect on job satisfaction. In the last section we pointed out that non-pecuniary job rewards offered in the public sector could induce a self-selection process causing individuals who value an increase in job security and promotion opportunities over an increase in monthly earnings to choose a job in the public sector. This leads us to explore whether the public sector systematically attracts and employs individuals with a distinct work attitude and personality.

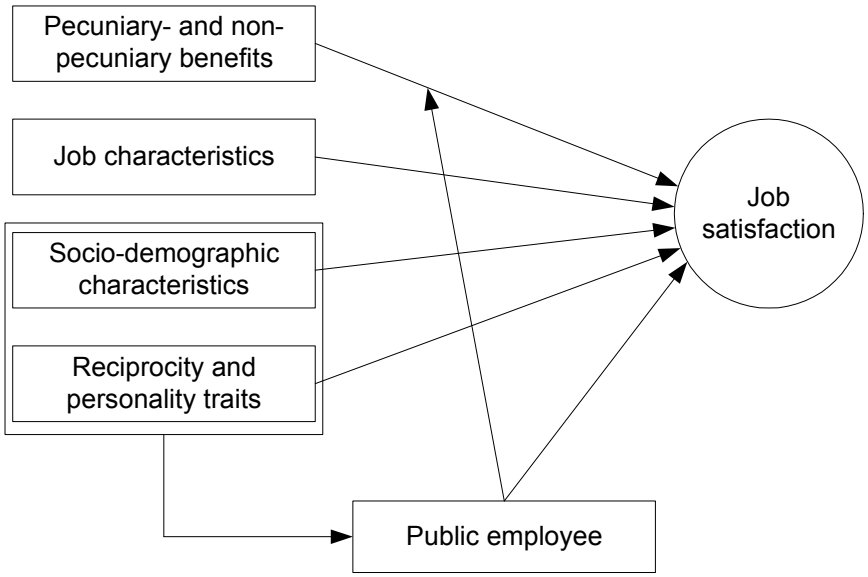
The person-environment-fit literature suggest that certain characters are attracted to particular organizational settings and that they are more likely to stay in these settings if they 'fit' (Leisink and Steijn 2008: 120). According to Kristof-Brown et al. (2005: 281) person-environment-fit is defined as "the compatibility between an individual and work environment that occurs when their characteristics are well matched." The central question is, which characters are most attracted by government employment? Or to put it the other way around, which kind of character is most likely to be hired by government agencies? We seek to describe potential differences in employees' characters on the basis of reciprocal motives and personality traits.

The idea that public employees hold distinct social and civic values is discussed in the literature on Public Service Motivation (PSM, Van der Wal and Huberts 2008; Norris 2003; Houston 2000; Gabris and Simo 1995). The public sector is presumed to attract individuals with a particular normative orientation – "a desire to serve the public interest, loyalty to duty and to the government as a whole, and social equity" (Perry & Wise 1990: 369). Brewer's (2003) comparison of public servants and other citizens with regard to civic attitudes such as social trust, altruism and civic participation indicates that those who reported to work for the government show higher levels of civic participation. Likewise, Vandenabeele (2008) demonstrates, on a sample of final year master students that public interest, civic duty and self-sacrifice, is positively correlated with a desire to work for the government. We expect that the social norm of reciprocity can be helpful to explain why public employees tend to report higher civic and social values. Drawing on the work of Brewer (2003) and Vandenabeele (2008) we expect that high values of reciprocity should be positively correlated with public sector employment.

Even though public employees tend to have a reputation for being "different", there is remarkable little systematic research on the relationship between personality and bureaucratic behavior (e.g. Bozeman and Rainey 1998: 167). The most systematic ap-

proach to explore the link between personality traits and public sector employment of which we are aware is presented by Bonzeman and Rainey (1998). They draw on the work of Thompson (1961) and Merton (1940) to test the existence of a “bureaucratic personality”. Merton (1940) assumes that personal characteristics influence the perception of organizational characteristics. In his view “bureaucratic” personalities are persons who have an inherent need for constraints and regulation. Probably the strongest version of this argument can be found in Thompson (1961), who suggests a theory of “bureaupathology”. In his perspective, a person’s favor for bureaucratic behavior stems from personal insecurity. Hence, those behaviors most people would think of as being bureaucratic, are pathological distortions of the Weberian bureaucracy in the account of Thompson (1961) (see also Bonzeman and Rainey 1998: 167). Personal insecurity gives rise to managerial efforts to exert control over public policies beyond any reasonable degree. According to these considerations we straightforward expect that lower levels of openness and extraversion and high levels of conscientiousness and agreeableness characterize public employees.

Fig. 1: Stylized model of job satisfaction among public employees and private sector employees



The resulting refined stylized framework on public sector employees’ job satisfaction is summarized in Figure 1. First, we test the direct effect of pecuniary/non pecuniary benefits, job characteristics, socio-demographic characteristics and reciprocity and personality traits on job satisfaction. Second, we explore the conditional effect of public employment on job satisfaction at different sections of the earnings distribution. Finally, we seek to explain sector affiliation on the basis of reciprocal motives and personality traits.

3. DATA AND METHOD

In order to test these ideas we choose Germany, which is known for having a strong legal state tradition (Rechtsstaatstradition). With 6.4 million public employees the state is still the largest employer in Germany (Statistisches Bundesamt 2008). A “tall hierarchy of positions, functional specialization, strict rules, impersonal relationships, and a high degree of formalization“ has been considered to characterize the German administrative system (Röber 1996: 170). Pollitt and Bouckaert (2000: 238) reach a similar conclusion, classifying the country as being close to the Weberian ideal type bureaucracy. This setting should provide a strong contrast for the exploration of differences between public and private sector employees’ job satisfaction functions. We test the “trading earnings for job security” argument on individual level data from the GSOEP 2005, which includes a short version of the Big Five Inventory (BFI, John and Srivastava 1999) and an item battery on reciprocal motives. In order to pinpoint differences in job satisfaction functions among public and private sector employees the sample is restricted to full- and part time employees of German nationality in West and East Germany. Respondents from the high-income, migrants and foreigners sample have been excluded from the analysis (Haisken-DeNew and Frick 2005).

3.1 Dependent variables

Job satisfaction is captured by the question “How satisfied are you with your job?” with answer categories ranging from totally unhappy (0) to totally happy (10). Even though we are aware that job satisfaction can have multiple facets, the dataset requires us to rely on a single item. Nevertheless, with respect to the growing *Economics of Happiness* literature (e.g. Frey and Stutzer 2002, Diener et al. 1999), we suppose that job satisfaction as measured in the GSOEP provides a valuable proxy for overall utility derived from work.

Sector affiliation is measured with a nominal variable by having four categories: (1) private sector employees, (2) public employees in an employment position (Angestellte), (3) public employees with a tenures position (Beamte) and (4) self-employed. Public employees with the status “Beamte” have a life-time working contract and separate social security programs. Public employees with the status “Angestellte” on the contrary have a working contract that falls under private law. Even though public employees (Angestellte) are still privileged compared to their private sector counterparts, they do not have a lifetime working contract. Due to these differences we have decided to split the public employee category into “Beamte” and “Angestellte” for the exploration of sector affiliation. With respect to differences in public and private sector employees’ job satisfaction functions we rely on a single dummy measure, which equals one if the respondent is employed as “Beamter” or “Angestellter” in the public sector.

Farmers and family helpers have been excluded from the self-employed group as we are primary interested in attitudes towards entrepreneurship.

3.2 Independent variables

Pecuniary benefits from work are measured with the following item “How satisfied are you with ... your personal income?” with answer categories ranging from totally unhappy (0) to totally happy (10). Non-pecuniary benefits from work are measured with two variables capturing job security and promotion chances. Job security is captured by a question asking respondents to assess their subjective likelihood to become unemployed within the next two years. Answers are ranging from definitely not (0) to definitely (10). After reversing these categories we use the item as an indicator of subjective job security. Promotion chances are captured by a question asking respondents to assess their subjective likelihood to get a promotion within the next two years. Answers are ranging from definitely not (0) to definitely (10).

Job characteristics are captured by the following variables: Tenure with the current employer, promotion opportunities, part- and fulltime employment contract, overtime work, the number of regular work holidays and occupational status. We measure occupational status with Ganzenboom, Graf and Treiman’s (1992) International Socioeconomic Index of Occupational Status (ISEI). Occupational status tends to be measured either with an ordinal variable capturing discontinuous social classes or with quasimetric measure of occupational status. We rely on the latter as we agree with Ganzenboom et al. (1992) that it becomes increasingly difficult to divide members of affluent society into a limited number of discrete classes. Compared to other continuous occupational prestige scales, ISEI scores have the additional advantage that they do not involve subjective judgments of occupational prestige, but are constructed on the basis of the average education and average income of occupational groups.[3] Overtime work and number of work holidays are considered as fringe benefits. They might be used to compensate public sector employees at the high-end of the earnings distribution for lower earnings. Socio-demographic characteristics are captured by the respondents’ marital status, age and gender. Moreover, since we still observe systematic differences in the wage structure in East and West Germany, we include a dummy, which indicates if the respondent lives in East Germany (Melly 2005).

In order to measure reciprocity and personality traits we draw on two item batteries used in the GSOEP 2005. Reciprocity is measured with three positive and three negative statements on reciprocity (Cornelissen, Heywood and Jirjahn 2010: 10). As an ex-

[3] Since ISEI score are based on occupation group specific earnings and education, these two measures are excluded form the job satisfaction function.

ample of positive reciprocity, respondents were asked “To what degree do the following statements apply to you personally? If someone does me a favor, I am prepared to return it”. As an example of negative reciprocity, respondents were asked “If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the cost”. Answer categories are given on a scale ranging from does not apply to me at all (0) to applies to me perfectly (7). Drawing on these items we construct an additive index of negative reciprocity and a second additive index of positive reciprocity.

Personality traits are measured with the BFI-15. The GSOEP 2005 includes the abbreviated version of the BFI composed by Gerlitz and Schupp (2005). The standard BFI usually consists of 44 short phrase items (John et al. 1999). Gerlitz and Schupp (2005) selected three items for each dimension. The selection procedure and reliability of the BFI-15 item battery compared to the BFI-25 item battery is discussed in Gerlitz and Schupp (2005). Overall, their empirical analysis suggests that the BFI-25 leads to smaller effect sizes but is still sufficient for research settings with strong time constraints. The question remains, however, whether the BFI inventory measures what it aims to measure (Gerlitz and Schupp 2005: 25). Our approach to encounter this shortcoming is the following: If the BFI-15 is an unreliable instrument, it should provide statistical artefacts. In this case, it should be very unlikely that we are able to reproduce findings from prior studies using the extended BFI to explore the relationship between personality traits and work satisfaction (see Judge and Mount 2005 for review). If, however, the BFI-15 confirms studies that rely on the extended version, the impact of personality traits on job satisfaction is probably larger than the impact captured by the survey instrument.

Finally, in order to explore if public and private sector employees’ job satisfaction functions differ across the earnings distribution we compute a categorical variable that indicates whether the respondent belongs into the first, second, third or fourth earnings quartile. Earnings are measured as the current gross labor income in Euro. The exact spelling and coding of variables is given in Appendix Table 1.

3.3 Statistical model

Assuming that the variable that measures job satisfaction [0-10] can be treated as quasi-metric, we employ OLS estimates with robust standard errors to predict job satisfaction functions. Alternatively, we use the quasi-maximum likelihood estimation approach suggested by Papke and Wooldridge (1996) and ordered logit regression models to explore the robustness of findings obtained from the OLS estimation approach (see Appendix Table 2). Using theses alternative estimators does not affect the substantive interpretation of the empirical analysis.

Concerning the role of personality traits and reciprocity as determinants of sector affiliation we rely on a multinomial logit regression model using the variable sector as the dependent variable. In this case, private sector employment is used as the reference category. In order to obtain easy interpretable coefficients and to compare the magnitude of effects (e.g. earnings satisfaction vs. job security and promotion chances), all (quasi) metric covariates have been z-standardized.[4] In order to compare the explanatory power of the four blocks of explanatory variables (see Figure 1), we introduce these blocks stepwise into the statistical model and compare the model-fit on the basis of the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC) and the adjusted McFadden's R2.

4. EMPIRICAL ANALYSIS

The empirical analysis proceeds in three steps. First, we compare the bivariate relationship between job satisfaction and pecuniary/non-pecuniary rewards in the lowest and highest earning quartile. Second, we estimate separate job satisfaction functions for public and private sector employees. Third, we use an interactive model specification to estimate the conditional effect of public sector employment on job satisfaction at different sections of the earnings distribution. Finally, we estimate two multinomial logit models to explore the impact of personality traits and reciprocity on sector affiliation in the low- and in the high-earnings sample.

Table 1: Bivariate relationship between job satisfaction and pecuniary/non-pecuniary job benefits at the lowest and highest income quartile

	Job satisfaction (0.25 quartile)		**Job satisfaction (0.75 quartile)**	
	Private	Public	Private	Public
Pecuniary benefit				
Income satisfaction	0.4626	0.4461	0.5163	0.3889
	[0.000]	[0.000]	[0.000]	[0.000]
Non-Pecuniary benefit				
Job security	0.2619	0.2431	0.377	0.1992
	[0.000]	[0.000]	[0.000]	[0.000]
Promotion chance	0.0689	0.1036	0.0604	0.1109
	[0.009]	[0.048]	[0.030]	[0.019]

Note: p-values in brackets. Income quartiles are based on the current gross labor income in Euros (2005)

4 Dataset and Stata do-files are available for replication purposes.

4.1 Bivariate relationship

In the lowest earnings quartile we find an identically strong positive correlation between job satisfaction and income satisfaction for public and private sector employees (0.46 and 0.45). The strength of the correlation changes for the two types of employees if we focus on the high-end of the earnings distribution. In this case private sector employees' job satisfaction shows a moderately stronger correlation with earnings satisfaction (0.52) than the same correlation for public employees (0.39). A similar pattern can be observed with respect to job security. Among public and private sector employees in the lowest earnings quartile we find almost similar strong positive correlations between job satisfaction and job security (around 0.25). In the highest income quartile, however, we observe that the correlation between job satisfaction and job security is almost twice as high for private sector employees (0.38) than for public sector employees (0.20). Only the strength of the correlation between job satisfaction and job promotion chances seems not to vary with earnings. In both instances - the lowest and the highest earnings quartile - the correlation between jobs satisfaction and promotion is around 0.06 for private sector employees and 0.10 for those working in the public sector.

Overall, the bivariate analysis indicates systematic variation in the role pecuniary and non-pecuniary benefits play for public and private sector employees' job satisfaction at different sections of the earnings distribution. However, these are just descriptive relationships that are looked at across all respondents without accounting for alternative determinants of job satisfaction. In order to understand the individual-level dynamics better, we now turn to multivariate analyses.

Table 2: Determinants of job satisfaction (split sample)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
	Dependent Variable: Job Satisfaction					
	Private sector employees			Public sector employees		
Pecuniary and non-pecuniary benefit						
Income satisfaction	0.430***	0.466***	0.446***	0.399***	0.419***	0.387***
	[0.01]	[0.01]	[0.02]	[0.03]	[0.03]	[0.03]
Job security	0.255***	0.260***	0.240***	0.123***	0.145***	0.129***
	[0.01]	[0.01]	[0.01]	[0.03]	[0.03]	[0.03]
Promotion chance	0.0862***	0.0877***	0.0895***	0.0844***	0.0865***	0.0635***
	[0.01]	[0.01]	[0.01]	[0.02]	[0.02]	[0.02]
Job characteristics						
Company size		-0.0426***	-0.0440***		-0.0959***	-0.103***
		[0.01]	[0.01]		[0.03]	[0.03]
Tenure with cur. empl.		-0.103***	-0.0679***		-0.0713***	-0.0396
		[0.01]	[0.02]		[0.02]	[0.02]
ISEI Scores		-0.0725***	-0.0683***		-0.0208	-0.00967
		[0.01]	[0.01]		[0.02]	[0.02]

Table 2: (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Dependent Variable: Job Satisfaction					
	Private sector employees			Public sector employees		
Part time empl.		0.0658**	0.0418		0.0104	0.110**
		[0.03]	[0.04]		[0.05]	[0.05]
Holidays		-0.0373***	-0.0318**		-0.000662	0.0149
		[0.01]	[0.01]		[0.03]	[0.02]
Overtime work		-0.00298	-0.00385		-0.0350	-0.0409*
		[0.01]	[0.01]		[0.02]	[0.02]
Socio-demo. and personal characteristics						
Female			0.0603**			-0.144***
			[0.03]			[0.05]
East Germany			0.123***			-0.00932
			[0.03]			[0.05]
Married			0.0528*			-0.0700
			[0.03]			[0.06]
Separated / Divorced			0.108**			-0.0643
			[0.05]			[0.08]
Widowed			0.0331			0.0365
			[0.12]			[0.17]
Age			-0.0457***			-0.0495
			[0.02]			[0.03]
Reciprocity and Personality traits						
Positive reciprocity			-0.00691			-0.0280
			[0.01]			[0.02]
Negative reciprocity			-0.00492			-0.0168
			[0.01]			[0.02]
Conscientiousness			0.0658***			0.100***
			[0.01]			[0.02]
Openness			0.0399***			0.0303
			[0.01]			[0.02]
Extraversion			0.0319**			0.0461*
			[0.01]			[0.02]
Agreeableness			0.0517***			0.0135
			[0.01]			[0.03]
Neuroticism			-0.105***			-0.116***
			[0.01]			[0.02]
Observations	5031	5031	5031	1926	1926	1926
Adjusted R2	0.297	0.318	0.350	0.191	0.202	0.238
AIC	12525.5	12380.7	12152.1	4991.8	4970.4	4896.5
BIC	12551.6	12446.0	12302.2	5014.1	5026.0	5024.5

Note: OLS estimates, robust standard errors in brackets, * p<0.05, ** p<0.01, *** p<0.001

4.2 Determinants of Job Satisfaction among Public and Private Sector Employees

There are at least two ways to explore differences in job satisfaction function between public and private sector employees. The effect of public sector employment on job satisfaction could either be modeled with multiplicative interaction terms (Kam and

Franzese 2007) or simply by estimating the same statistical model on two separate samples - one for public sector employees and one for private sector employees (DeSantis and Durst 1996, Frank and Lewis 2004). The split sample approach provides an easy way to explore whether the effect of our four explanatory concepts fundamentally differs between the two types of employees. However, in order to evaluate whether the impact of a certain explanatory variable significantly differs between public and private sector employees we need to employ an interactive model specification. According to these methodological considerations we will start with the split-sample approach to identify the most important determinants of job satisfaction. Thereafter we will use these variables in the multiplicative interaction model specification.

Table 2 presents three estimation models for each of the two types of employees. Model 1 and 3 indicate that income satisfaction, job security and promotion opportunities are the three most important determinants of job satisfaction. The three variables account for 29.7% of variance in job satisfaction among private sector employees and 19.1% of variance in job satisfaction among public employees. Adding the three additional blocks of explanatory variables (job characteristics, socio-demographic characteristics and reciprocity/personality traits) leads to rather small improvements of the model fit (plus 5.3% in the private sector sample and plus 4.7% in the public sector sample). The estimation coefficients show that income satisfaction has the strongest impact on job satisfaction. A one standard deviation increase in income satisfaction increases job satisfaction by 0.43 to 0.47 in the private sector and by 0.39 to 0.42 in the public sector. The marginal effect of job security on job satisfaction is almost half that strong (0.24 to 0.26 in the private sector sample and 0.12 to 0.26 in the public sector sample). Among the three pecuniary/non-pecuniary benefit measures, job promotion chances have the smallest impact on job satisfaction (around 0.08 in both sub samples).

Concerning the impact of those variables that are used to capture job characteristics we find that job satisfaction decreases with the number of employees in the firm, the length of tenure with the firm and the occupational status. Even though these variables show in the similar direction in the public sector sample, the effect of tenure and occupational status remain insignificant. Surprisingly, the number of holidays yields a negative effect on job satisfaction in the private sector sample. Even after accounting for a non-linear relationship between the number of work holidays and job satisfaction we do not find that job satisfaction increases with the number of work holidays. Overtime work is associated with lower job satisfaction among public sector employees. This negative relationship, however, remains rather weak in terms of impact (-0.04) and statistical significance.

With respect to the socio-demographic control variables we observe even stronger differences in the two job satisfaction functions. In the private sector job satisfaction is

positively associated with gender, region and the martial status and negatively associated with age. In the public sector, only gender exerts a statistically significant and negative impact on job satisfaction. We expect that these effects point out to differences in the socio-demographic composition of the public and private sector workforce, whereas the latter is frequently characterized by a higher female employment rate (Melly 2005).

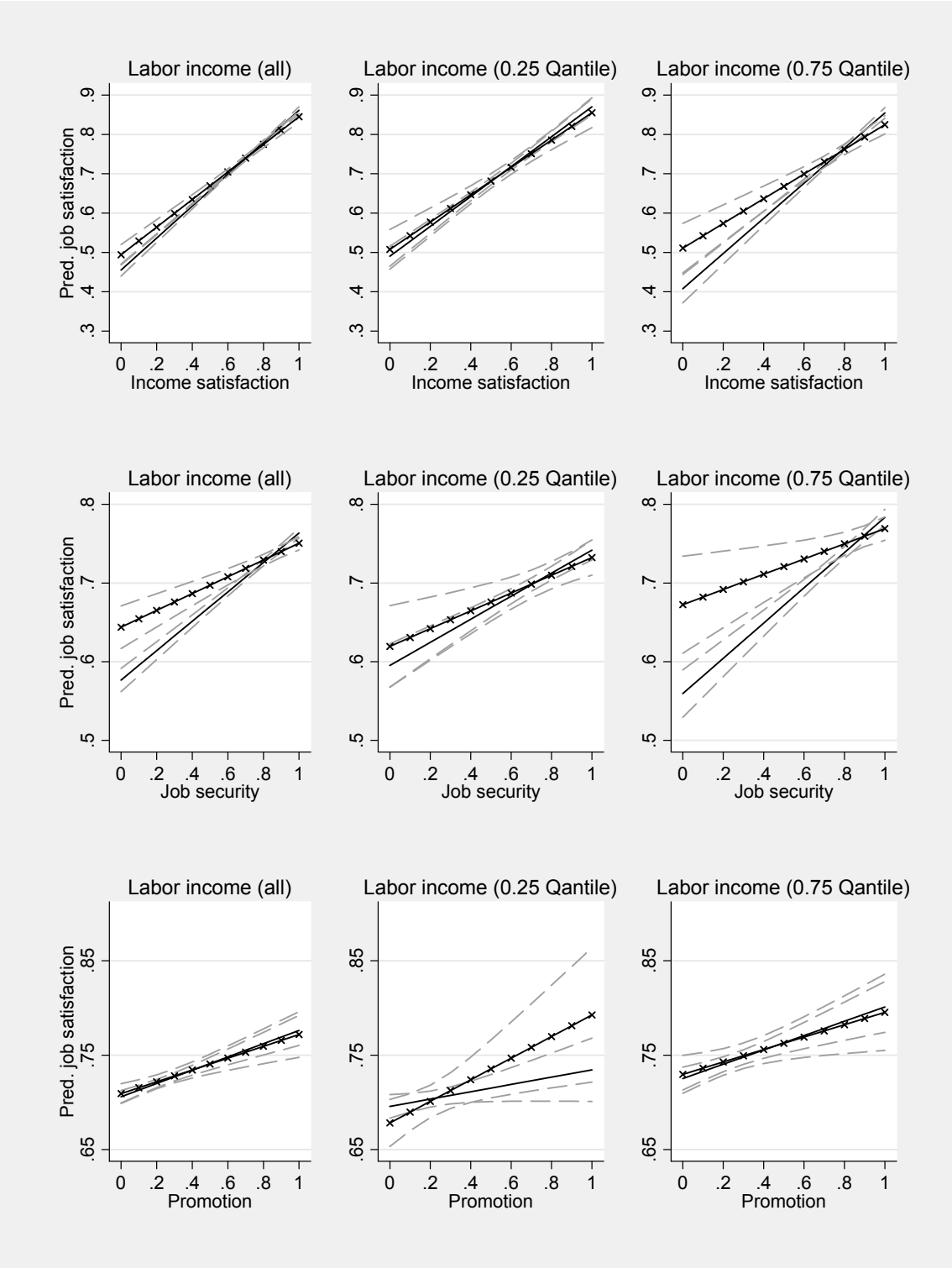
In contrast to personality traits, the two measures of reciprocity yield no significant impact on job satisfaction. In line with our expectations, respondents that report high levels of consciousness, agreeableness and extraversion tend to be more satisfied with their work in both sectors of the economy. Equally consistent with Watson's (2000) negative/positive affectivity framework is the observation that neurotic personalities tend to be more dissatisfied with their work. Openness has a positive impact on job satisfaction in the private sector but not in the public sector sample.

To sum up, the split sample analysis indicates that pecuniary and non-pecuniary benefits are the most important determinants of job satisfaction. In contrast to Vigoda-Gadot and Talmud (2010) our analysis does not indicate that reciprocity has a direct positive effect on employees' job satisfaction. However, we are able to confirm prior research on the role of personality traits (Judge and Mount 2002). We find that personality traits have a unique and direct effect on job satisfaction among employees in both sectors of the economy. Even if the BFI-15 might not measure what it intents to measure, the item battery still improves our ability to predict job satisfaction.

4.2 The Conditional Effect of Public Sector Employment on Job Satisfaction

Let us now consider whether the impact of pecuniary and non-pecuniary benefits differ significantly between public and private sector employees at different sections of the earnings distribution. To this end, we compute three interaction terms: *public employee x income satisfaction*, *public employee x job security* and *public employee x job promotion*. We estimate the impact of these interactions on three different samples: the full sample including all public and private sector employees, the 0.25 quartile sample, including public and private sector employees in the lowest earning quartile and finally the 0.75 quartile sample, including public and private sector employees in the highest earning quartile.

Fig. 2: Conditional effect of public employment on job satisfaction at different positions in the income distribution (full sample)



Note: Solid black line with crosses = public employees, Solid black line without crosses = private sector, Dashed grey lines = 95% confidence intervals, y and x-axes are standardized to range from 0 to 1. Full estimation results available upon request.

The substantive effect of theses three interactions is represented in Figure 2.[5] The bold solid line with crosses represents the conditional effect of public employment on the predicted level of job satisfaction when income satisfaction (first row), job security (second row) or promotion chances (third row) range from its minimum to its maximum. The thin solid line represents the conditional effect of these variables for private sector employees. The dashed lines indicate the 95 % confidence intervals.

In the full-sample and the 0.25 quartile sample, job satisfaction among private and public employees increases with income satisfaction. As the confidence intervals for the two groups are largely overlapping we can conclude that the impact of income satisfaction on job satisfaction does not significantly differ between the two types of employees. In the 0.75 quartile sample, however, we observe two things: first, the predicted level of job satisfaction is always higher for public employees, and second a one-unit increase in income satisfaction leads to a larger increase in job satisfaction among private sector employees. The Wald test on the joint statistical significance of the interaction specification yields an F-values of 8.44** in the 0.75 quartile sample and an F-values of 6.87** in the overall sample. The conditional effect plots reveal that the strength of the conditional effect depends on the position in the earnings distribution. This pattern implies that at the high-end of the earnings distribution a reduction in income satisfaction has a smaller negative effect on job satisfaction among public employees than a similar reduction would have on private sector employees job satisfaction.

Differences in public and private sector employees' job satisfaction function become even more pronounced with respect to job security. In general public employees have a higher level of predicted job satisfaction for each level of job security. Moreover, job satisfaction increases with higher job security in both groups, even though at a different rate. The Wald Test indicates that the interaction specification is significant in the full sample (18.31***) and in the 0.75 quartile sample (8.83**). The conditional effect plot for the 0.75 quartile sample reveals that private sector employees' job satisfaction is more responsive towards an increase in job security than public sector employees' job satisfaction. This pattern is consistent with the idea that public employees job satisfaction function varies across the earnings distribution, however it does not support the assumption that public employees at the high end of the earnings distribution value non-pecuniary benefits over pecuniary work benefits. We speculate that the observed pattern could be partially driven by our operationalization of job security. We use the subjective evaluation of the respondents' unemployment risk as a proxy for job security. The "trading earnings for job security" mechanism, however, refers to the subjective impor-

5 In order to calculate conditional effect plots we use the *predxcon* command by Garret (2005).

tance of job security for job satisfaction. Unfortunately, the GSOEP does not include such an item.

With respect to job promotion chances, the Wald test indicates that in none of our three samples, the interaction specification reaches conventional levels of statistical significance. If anything, we find that promotion opportunities are more important for public sector employees in the lowest earnings quartile. In the full sample and the high earnings sample, promotion opportunities are equally important for public and private sector employees' job satisfaction.

Table 3: Determinants of sector affiliation at the lowest and highest income quartile

	Model 1			**Model 2**		
	Public employee (Angestellte)	Public employee (Beamte)	Self-Employed	Public employee (Angestellte)	Public employee (Beamte)	Self-Employed
	0.25 quartile			0.75 quartile		
Reciprocity						
Positive reciprocity	-0.0188	0.0372	-0.170*	-0.0358	-0.0879	-0.0239
	[0.07]	[0.18]	[0.09]	[0.08]	[0.08]	[0.08]
Negative reciprocity	0.0126	-0.142	-0.175*	-0.0932	-0.258***	0.0435
	[0.07]	[0.16]	[0.10]	[0.09]	[0.10]	[0.09]
Personality traits						
Conscientiousness	-0.113	-0.366**	-0.119	0.0262	-0.215**	-0.00627
	[0.07]	[0.16]	[0.11]	[0.08]	[0.08]	[0.09]
Openness	0.0344	0.167	0.376***	0.195**	0.134	0.155*
	[0.07]	[0.17]	[0.10]	[0.08]	[0.09]	[0.09]
Extraversion	-0.0415	0.208	0.187*	-0.110	-0.0211	0.268***
	[0.07]	[0.20]	[0.11]	[0.08]	[0.09]	[0.09]
Agreeableness	0.0552	-0.252	-0.00891	0.0904	0.0600	0.0737
	[0.08]	[0.16]	[0.10]	[0.09]	[0.09]	[0.08]
Neuroticism	-0.119*	-0.174	0.0795	0.172**	-0.0477	0.0350
	[0.07]	[0.19]	[0.10]	[0.08]	[0.09]	[0.08]
Socio-demo. characteristics						
Female	0.886***	0.284	-1.428***	1.033***	0.703***	-0.0869
	[0.19]	[0.43]	[0.20]	[0.17]	[0.21]	[0.21]
East Germany	-0.351**	-1.370***	0.128	0.761***	-0.693**	0.279
	[0.14]	[0.49]	[0.19]	[0.18]	[0.28]	[0.21]
Married	0.227	0.655	0.521*	0.0784	0.768**	-0.224
	[0.20]	[0.44]	[0.30]	[0.21]	[0.30]	[0.23]
Separated / Divorced	0.0693	-31.91***	0.542	0.313	1.279***	-0.0510
	[0.27]	[0.40]	[0.36]	[0.30]	[0.36]	[0.31]

Table 3: (continued)

	Model 1			Model 2		
	Public employee (Angestellte)	Public employee (Beamte)	Self-Employed	Public employee (Angestellte)	Public employee (Beamte)	Self-Employed
	0.25 quartile			0.75 quartile		
Widowed	-0.0593	-30.05***	0.158	0.0737	-0.551	0.162
	[0.44]	[0.74]	[0.62]	[0.59]	[1.04]	[0.57]
Age	0.153*	-0.770***	0.359***	0.125	0.779***	0.582***
	[0.08]	[0.21]	[0.11]	[0.10]	[0.10]	[0.10]
Education	0.113**	0.433***	0.393***	0.189***	0.307***	-0.00122
	[0.06]	[0.16]	[0.07]	[0.06]	[0.07]	[0.05]
Manager	-0.564	-33.84***	1.453	-34.49***	-0.859	-0.960
	[1.04]	[0.83]	[0.94]	[0.36]	[1.05]	[0.99]
Technician	0.924***	-0.912	0.763**	-0.109	-0.0675	0.0700
	[0.26]	[1.07]	[0.38]	[0.59]	[0.84]	[0.62]
Office workers	-1.698**	-33.28***	0.146	-0.857	-34.62***	-34.66***
	[0.74]	[0.32]	[0.63]	[1.13]	[0.45]	[0.37]
Service workers	-0.0857	-0.992	0.239	1.359	-33.72***	2.642**
	[0.34]	[1.11]	[0.57]	[1.65]	[1.08]	[1.24]
Agriculture	0.384	-32.89***	-32.21***	-0.870	-0.123	39.89
	[0.82]	[0.67]	[0.40]	[1.05]	[1.06]	[.]
Craftsmen	-1.281	-32.74***	0.764	-34.07***	-33.10***	0.929
	[1.04]	[0.48]	[0.49]	[0.60]	[0.57]	[0.87]
Academic	1.111**	1.844***	1.008**	0.294	0.670	0.465
	[0.45]	[0.62]	[0.51]	[0.38]	[0.45]	[0.45]
Observations		1794			1748	
Adj. R-squared		0.077			0.053	
AIC		2921.5			3690.3	
BIC		3284.0			4040.1	

Note: multinomial logit regression, robust standard errors in brackets, reference category = private sector employment, * p<0.05, ** p<0.01, *** p<0.001

4.3 Determinants of Sector affiliation

In order to test whether differences in public and private sector employees' job satisfaction function can be related to personal characteristics, we explore the effect of reciprocal motives and personality traits on sector affiliation. Table 3 presents the estimation results of two multinomial logit models. Model 1 is estimated on the 0.25 quartile earnings sample and Model 2 employs the 0.75 quartile earning sample. In both instances we use private sector employment as the reference category.

The socio-demographic control variables confirm the expected structural differences in the composition of the public workforce. Public sector employees tend to be older than their private sector counterparts, hold a higher degree of formal education and are more likely to be females. In the low earnings sample (Model 1) we find that the self-employed show statistically significant lower levels of positive and negative reciprocity. In this respect one might conclude that a lack of reciprocity is a distinct feature of an entrepreneur character. However, this statistical relationship breaks down in the high-earnings sample.

With respect to reciprocal motives Model 2 indicates that respondents with low levels of negative reciprocity are more likely to work in the public sector (Beamte). This would imply that public employees (Beamte) are less willing to punish unkind actions than their private sector counterparts. Positive reciprocity has no systematic impact on sector affiliation. If anything the empirical analysis of reciprocal motives provides rather limited support for the idea that public employees hold distinct social motives (Brewer 2003).

With respect to the impact of personality traits on sector affiliation we find a persistent pattern for those respondents working as self-employed. In both samples higher levels of openness and extraversion are associated with self-employment. This pattern once more tilts in the direction of a distinct entrepreneurship character. Concerning public sector affiliation, Model 1 indicates that public employees (Angestellte) show significantly lower levels of neuroticism than their private sector counterparts. In the high earnings sample, however, a higher level of neuroticism increases the likelihood to work as a public employee (Angestellte). Even though we are not able to explain why the impact of neuroticism changes it confirms the idea that the impact of personality traits for sector affiliation varies across the earnings distribution. A more consistent pattern can be observed for public employees (Beamte). In both instances – 0.25 and 0.75 quartile earnings sample - public employees (Beamte) report lower levels of conscientiousness than their private sector counterpart. According to this pattern one might conclude that public employees with tenure positions (Beamte) tend to be less careful and less thorough in their work attitudes. In substantive terms the observed pattern seems to appeal more to public prejudices of “effort-averse” bureaucrats (Frank and Lewis 2004) than it does appeal to Thompson’s (1961) idea of “bureaupathology”.

5. CONCLUDING REMARKS

Motivated by concerns about current attempts to re-organize public sector employment, this study explores the determinants of public employees’ job satisfaction. Focusing on three concepts - reciprocal motives, personality traits and wage differences - we proposed a refined model of public employees’ job satisfaction. To test the impact of these

concepts the empirical analysis relies on individual level data from the GSOEP 2005. Results of the multivariate analysis can be summarized in three points: First, in contrast to reciprocal motives, personality traits have a unique and direct effect on public and private sector employees' job satisfaction. Second, even though we cannot proof that public employees at the high-end of the earnings distribution trade a loss in pecuniary benefits against an increase in non-pecuniary benefits, the empirical analysis strongly supports the notion that public employees' job satisfaction function varies across the earnings distribution. Finally, public employees' personal characteristics can be associated with lower levels of negative reciprocity, conscientiousness and neuroticism, pointing out to a potential self-selection and recruitment bias in the public sector.

Before we present potential practical implications that can be drawn from this study we should consider its methodological limitations. It is important to note that we explore data on current employment situations instead of pre-employment situations. This fact puts tight restrictions on the interpretation of our empirical analysis (Steen 2008). Even though we include a measure on the number of years working for the same employer, we cannot fully account for the effect that the work socialization might has on our explanatory categories.

In practical terms our analysis indicates that there might be a selection bias in the public employment recruitment process. Those personality traits that have been associated with an entrepreneur character are systematically underrepresented in the public workforce. A second implication concerns continuing attempts the increase the relevance of performance based pay components in public employees work benefit packages. In this context, the conditional effect analysis indicates that public employees are less responsive towards a decline in earnings satisfaction than private sector employees. From this one might conclude that a reduction in public salaries will have a small or hardly any impact on public employees' work attitude and thereby on the quality of public service provisions. However, our analysis also shows that we have not yet fully understood the complexity of compensation mechanisms that make public sector employees at the high end of the earnings distribution accept lower earnings. A deeper understanding of these mechanisms, however, is required to design public employment benefit packages that are able to attract, motivate and satisfy qualified personnel.

For the purpose of this preliminary analysis of differences in public and private sector employees' job satisfaction functions we relied on a simple public/private sector dichotomy. Further research might decompose public employment by the branch of economic activity. We can distinguish at least three distinct branches of public sector production: executive and management tasks in the public administration, the provision of social services such as public health and education, and the manual production of public services (waste disposal, infrastructure maintenance, energy and water supply,

etc.). With a general trend of increasing specialization, these branches of public sector production might attract employees with very different work attitudes and personality traits.

REFERENCES

Bergmann, T. J., Bergmann, M. A., and Grahn, J. L. (1994) ‘How important are employee benefits to public sector employees’, *Public Personnel Management*, 23, 397-406.

Blackbum, J. W., and Bruce, W. M. (1989) ‘Rethinking concepts of job satisfaction: The case of Nebraska municipal clerks’, *Review of Public Personnel Administration*, 10, 11-28.

BMF (2010) Bundesministerium für Finanzen: Nachhaltig Sparen - Gerecht Sparen: Das Zukunftspaket der Bundesregierung, Berlin.

Bowles, S. and Gintis, H. (2003) ‘Homo Reciprocans’, *Nature* 415: 125 – 28.

Bozeman, B. and Rainey, H. (1998) ‘Organizational Rules and the "Bureaucratic Personality"’, *American Journal of Political Science*, 42(1): 163-189.

Brewer, G.A. (2003) ‘Building Social Capital: Civic Attitudes and Behavior of Public Servants’, *Journal of Public Administration Research and Theory* 13(1): 5-26.

Carrell, M., and Elbert, N. (1974) ‘Some personal and organizational determinants of Job satisfaction of postal clerks’, *Academy of Management Journal* 16, 53-66.

Cornelissen, T., Heywood, J. and Jirjahn, U. (2010) ‘Profit Sharing and Reciprocity: Theory and Survey Evidence’, *SOEPpapers* No. 292, Berlin: DIW Berlin.

Cox, J., Friedman, D. and Gjerstad, S. (2007) ‘A Tractable Model of Reciprocity and Fairness’, *Games and Economic Behavior* 59: 17 – 45.

Cox, J., Friedman, D. and Sadiraj, V. (2008) ‘Revealed Altruism’, *Econometrica* 76: 31 – 69.

Crewson, P.E. (1997) ‘Public Service Motivation: Building Empirical Evidence of Incidence and Effect’, *Journal of Public Administration* 7: 499 - 518.

DeSantis, V.S., and Durst, S.L. (1996) ‘Comparing Job Satisfaction among Public- and Private-Sector Employees’, *The American Review of Public Administration* 26(3): 327 - 343.

Diener, E., Eunkook, M., Richard, E., and Smith, H. (1999) ‘Subjective Well-Being: Three Decades of Progress’*, Psychological Bulletin* 125(2): 276–303.

Disney, R., and Gosling, A. (1998) ‘Does It Pay to Work in the Public Sector?’, *Fiscal Studies* 19(4): 347–374.

Dohmen, T., Falk, A., Huffman, D. and Sunde, U. (2009) ‘Homo Reciprocans: Survey Evidence on Behavioral Outcomes’, *Economic Journal* 119: 592 – 612.

Emmert, M. A., and Taher, W. A. (1992) ‘Public sector professionals: The effect of public sector Jobs on motivation, Job satisfaction and work involvement’, *American Review of Public Administration*, 22, 37-48

Falk, A. and Fischbacher, U. (2006) ‘A Theory of Reciprocity’, *Games and Economic Behavior* 54: 1347 – 81.

Frank, S.A., and Lewis, G.B. (2004) ‘Government Employees: Working Hard or Hardly Working?’, *The American Review of Public Administration* 34(1): 36-51.

Frey, B. and Stutzer, A. (2002) ‘The Economics of Happiness’, *World Economics* 3(1): 1-17.

Gabris, G.T., and Simo, G. (1995) ‘Public Sector Motivation as an Independent Variable Affecting Career Decisions’, *Public Personnel Management* 24(1): 33 - 51.

Ganzeboom, H., P. Graaf, D. Treiman and J. Leeuw. 1992 ‘A standard international socio-economic index of occupational status’, *Social Science Research* 21, 1-56.

Garrett, J. (2005) PREDXCON: Stata module to calculate predicted means, medians, or proportions for a continuous X variable, http://econpapers.repec.org/software/bocbocode/s402602.htm

Gerlitz, J. and Schupp, J. (2005) ‘Zur Erhebung der Big-Five-basierten Persönlichkeitsmerkmale im SOEP’, *Research Notes*, Berlin. DIW Berlin.

Ghinetti, P., and Lucifora, C. (2008) ‘Public Sector Pay Gaps and Skill Levels: a Cross-Country Comparison’ SEMEQ Department - Faculty of Economics - University of Eastern Piedmont.

Gornick, J.C., and Jacobs, J.A. (1998) ‘Gender, the Welfare State, and Public Employment: A Comparative Study of Seven Industrialized Countries’, *American Sociological Review* 63(5): 688 - 710.

Hackman, J., and Lawler, E. (1971) ‘Employee reaction to Job characteristics’, *Journal of Applied Psychology* 55, 259-286.

Haisken-DeNew, J. and Frick, J. (2005) DTC Desktop Companion to the German Socio-Economic Panel (SOEP), Berlin. DIW Berlin.

Houston, D.J. (2000) ‘Public-Service Motivation: A Multivariate Test’, *Journal of Public Administration Research and Theory* 10(4): 713-727.

John, O. P., and Srivastava, S. (1999) ‘The Big Five trait taxonomy: History, measurement, and theoretical perspectives’, In L. A. Pervin and O. P. John (Eds.), *Handbook of personality theory and research*, New York: Guilford Press. pp. 102-138.

Judge, T. and Mount, M. (2002) ‘Five-Factor Model of Personality and Job Satisfaction: A Meta-Analysis’, *Journal of Applied Psychology* 87, 3, 530–541.

Kalleberg, A. (1977) “Work values and Job rewards: A theory of job satisfaction’, *American Sociological Review* 42, 124-143.

Kam, C., Franzese, R. (2007) *Modeling and Interpreting Interactive Hypotheses in Regression Analysis*. Michigan, University of Michigan Press.

Kristof-Brown, A. L., R. D Zimmerman and E. C. Johnson. 2005. ‘Consequences of individuals’ fit at work: A meta-analysis of person-job, person organization, person-group, and person-supervisor fit’, Personnel Psychology 58,2, 281-320.

Leana, C.R., and Van Buren, H. J. (1999) ‘Organizational social capital and employment practices’, *Academy of Management Review* 24, 538-555.

Lee, R., and Wilbur, E. (1985) ‘Age, education, Job tenure, salary, Job characteristics, and Job satisfaction: A multivariate analysis’, *Human Relations* 38, 781-791.

Leisink, P. and B. Steijn (2008) ‘Recruitment, Attraction, and Selection’, in J. Perry and A. Hondeghem (eds.), *Motivation in Public Management. The Call of Public Service*, Oxford: Oxford University Press, pp.118-135.

Maidani, E. A. (1991) ‘A comparative study of Hertzberg’s two-factor theory of Job satisfaction among public and private sectors’, *Public Personnel Management* 20, 441-448.

Mannheim, B. (1983) ‘Male and female industrial workers: Job satisfaction, work role centrality, and work place preference’, *Work and Occupations*, 10, 113-136.

Martin, J. and Hanson, S. (1985) ‘Sex, family wage-earning Status, and satisfaction with work’, *Work and Occupations*, 12, 91 -109.

McCrae R. R., and Costa, P. T. (1990) *Personality in adulthood*. New York: Guilford.

Melly, B. (2005) ‘Public-private Sector Wage Differentials in Germany: Evidence from Quantile Regression’, *Empirical Economics* 30: 505-520.

Merton, R. (1940) *Bureaucratic Structure and Personality*, Social Forces 18: 560-668.

Mottaz, C. (1986) ‘An empirical evaluation of models of work satisfaction’, *Social Science Research*, 15, 153-173.

Norris, P. (2003) ‘Is there still a public sector ethos? Work values, experience, and job satisfaction among government workers’, In J.D. Donahue, and J.S. Nye (Eds.), *For the People: Can We Fix Public Service?* 72-89. Washington: Brookings Institution Press.

OECD (2009) *Government at a Glance 2009*, Paris: OECD.

Papke, L.E., and Wooldridge, J.M. (1996) ‘Econometric Methods for Fractional Response Variables With an Application to 401 (K) Plan Participation Rates’, *Journal of Applied Econometrics* 11(6): 619 - 632.

Perry, J.L., and R., W.L. (1990) ‘The Motivational Bases of Public Service’, *Public Administration Review* 50(3): 367 - 373.

Pierce G. R., Sarason B. R., and Sarason I. G. (1990) ‘Integrating social support perspectives: Working models, personal relationships and situational factors’, In S. Duck (Ed.). *Personal relationships and social support*. London: Sage Publications.

Pollitt, C., and Bouckaert, G. (2004). *Public Management Reform: A Comparative Analysis*. Oxford Oxford University Press.

Rainville, J.-M. (1977) ‘Comparative effects of pace of work and job enrichment on job satisfaction among manufacturing workers’, *Labour and Society* 2, 289-300.

Röber, M. (1996). Germany. In D. Farnham, S. Horton, J. Barlow, and A. Hondeghem (Eds.), *New Public Managers in Europe*. 169 - 194. Macmillan: Basingstoke.

Roccas, S.; Sagiv, L.; Schwartz, S. and Knafo, K. (2002) ‘The Big Five Personality Factors and Personal Values’, *Personality and Social Psychology Bulletin* 28(6): 789-801.

Schuster, J.R. (1974) ‘Management-Compensation Policy and the Public Interest’, *Public Personnel Management* 3: 510 - 523.

Schwab, D., and Wallace, M. (1974) ‘Correlates of employee satisfaction with pay’, *Industrial Relations*, 13, 78-89.

Statistisches Bundesamt (2008) *Finanzen und Steuern 2007. Personal des öffentlichen Dienstes, Fachserie 14, Reihe 6*, Wiesbaden: Statistisches Bundesamt.

Steen, T.(2008) Not a Government Monopoly: The Private, Nonprofit, and Voluntary Sectors. In J. Perry and A. Hondeghem (Eds.) *Motivation in Public Management. The Call of Public Service*, Oxford: Oxford University Press, p.203-222.

Taylor, G. S., and Vest, M. J. (1992) ‘Pay comparisons and pay satisfaction among public sector employees’, *Public Personnel Management* 21, 445-454.

Tepe, M. and Kroos, D. (2010) ‘Lukrativer Staatsdienst? Lohndifferenzen zwischen öffentlichem Dienst und Privatwirtschaft’, *WSI Mitteilungen* 1/2010

Thompson, V. (1961) *Modern Organization*, New York: Knopf.

Van der Wal, Z. and Huberts, L. (2008) ‘Value Solidity in Government and Business’, *The American Review of Public Administration*. 38(3): 264-285.

Vandenabeele, W. 2008. ‘Government Calling: Public Service Motivation as an Element in Selecting Government as an Employer of Choice’*, Public Administration* 86,4, 1089-1105.

Vigoda-Gadot, E. and Talmud, I. (2010) ‘Internal Politics in Academia: Theoretical and Empirical Analysis of its Relationship with Social Capital and Job Performance’ *Journal of Applied Social Psychology* (forthcoming, http://soc.haifa.ac.il/~talmud/uploads/editor_uploads/files/OP_SoCap_Moderation.paped1.pdf)

Voydanoff, P. (1980) ‘Perceived job characteristics and job satisfaction among men and women’, *Psychology of Woman Quarterly* 5, 177-185.

Watson, D. (2000). *Mood and temperament*. New York: Guilford Press.

Watson, D., Clark, L. A., and Tellegen, A. (1988) ‘Development and validation of brief measures of positive and negative affect: The PANAS scales’, *Journal of Personality and Social Psychology*, 54, 1063–1070.

Wright, B. (2001) ‘Public-Sector Work Motivation: A Review of the Current Literature and a Revised Conceptual Model’, *Journal of Public Administration Research and Theory* 11(4): 559-586.

APPENDIX

Appendix Table 1: Definition and source of variables

Variable label	Definition (non-standardized range)
Job satisfaction	How satisfied are you with ... your job? [0-10]
Sector	1 = Private sector employment, 2 = Public servant (Angestellte), 3= Public servant (Beamte), 4 = Self-employed (no farmers and family helpers)
Public employee	Public servant (Angestellte) and public servant (Beamte), Dummy, generated from: In which branch of business or industry is your company or institution active for the most part? and “Occupational position” item.
Income satisfaction	How satisfied are you with ... your personal income? [0-10]
Job security	How likely is it that the following career changes will take place in your life within the next two years? … lose your job? [0-10 reversed]
Promotion chance	How likely is it that the following career changes will take place in your life within the next two years? … receive a promotion at your current place of employment? [0-10]
Company size	Approximately how many people does the company employ as a whole? [1-10]
Tenure with current employer	Length Of Time With Firm in years [0-58.1]
ISEI Scores	International Socio-Economic Index of Occupational Status, ISEI [16-90]
Part time empl.	Employment Status (Reference = Full-time empl.) Dummy
Holidays	How many paid vacation days do you receive per year? [0-98]
Overtime work	Actual work time per week minus agreed upon work time per week [-22-40]
Female	Gender (Reference = Male) Dummy
East Germany	East Germany (Reference = West) Dummy
Married, Widowed, etc.	Marital status (Reference = Single) Dummies
Age	Age in years [17-84]
Education	ISCED Classification [2-6]
Type of Occupation	ISCO 88 Occupation Code (Manager, Technician, etc.) (Reference = elementary worker) Dummies
Income	Current gross labor income in Euros [0-22000]
Positive reciprocity	Additive Index: If someone does me a favor, I am prepared to return it [1-7], I go out of my way to help somebody who has been kind to me before [1-7],I am ready to undergo personal costs to help somebody who helped me before [1-7].
Negative reciprocity	Additive Index: If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the cost [1-7], If somebody puts me in a difficult position, I will do the same to him/her[1-7], If somebody offends me, I will offend him/her back.) [1-7].
Conscientiousness	Additive Index: I see myself as someone who ...does a thorough job [1-7], ...does things effectively and efficiently [1-7], ...tends to be lazy (reversed) [1-7]
Openness	Additive Index: I see myself as someone who ...is original, comes up with new ideas [1-7], ...has an active imagination [1-7], ...values artistic experiences [1-7]
Extraversion	Additive Index: I see myself as someone who ...is communicative, talkative [1-7], ...is outgoing, sociable [1-7], ...is reserved (reversed) [1-7]
Agreeableness	Additive Index: I see myself as someone who ...has a forgiving nature [1-7], ...is considerate and kind to others [1-7], ...is sometimes somewhat rude to others (reversed)[1-7]
Neuroticism	Additive Index: I see myself as someone who ...is relaxed, handles stress well (reversed) [1-7], ...gets nervous easily [1-7], ...worries a lot [1-7]

Source: DIW German Socio-Economic Panel (2005). High-income, migrants and foreigners sample excluded. Dataset and Stata syntax are available for replication purposes.

Appendix Table 2: Alternative estimation approaches (Quasi maximum likelihood, ordered logit model)

	Model 1	Model 2	Model 3	Model 4
	Quasi ML		Ordered logit	
	Dependent variable: Job satisfaction			
	Private	Public	Private	Public
Pecuniary and non-pecuniary benefit				
Income satisfaction	0.408***	0.357***	1.052***	0.871***
	[0.01]	[0.03]	[0.04]	[0.06]
Job security	0.217***	0.118***	0.521***	0.257***
	[0.01]	[0.02]	[0.03]	[0.06]
Promotion chance	0.0851***	0.0640***	0.184***	0.115***
	[0.01]	[0.02]	[0.03]	[0.04]
Job characteristics				
Company size	-0.0658***	-0.0398*	-0.151***	-0.0967*
	[0.01]	[0.02]	[0.03]	[0.05]
Tenure with current employer	-0.0665***	-0.00851	-0.146***	-0.0379
	[0.01]	[0.02]	[0.03]	[0.04]
ISEI Scores	0.0331	0.106**	0.114	0.227**
	[0.04]	[0.05]	[0.08]	[0.11]
Part time empl.	-0.0354***	0.0144	-0.0609**	0.0207
	[0.01]	[0.03]	[0.03]	[0.05]
Holidays	-0.00375	-0.0392*	-0.00230	-0.0853**
	[0.01]	[0.02]	[0.03]	[0.04]
Overtime work	-0.0658***	-0.0398*	-0.151***	-0.0967*
	[0.01]	[0.02]	[0.03]	[0.05]
Socio-demo. and personal characteristics				
Female	0.0525*	-0.143***	0.132**	-0.304***
	[0.03]	[0.05]	[0.06]	[0.10]
East Germany	0.106***	-0.0171	0.247***	-0.0176
	[0.03]	[0.04]	[0.06]	[0.09]
Married	0.0581*	-0.0767	0.0764	-0.247**
	[0.03]	[0.06]	[0.07]	[0.13]
Separated / Divorced	0.111**	-0.0667	0.246**	-0.122
	[0.04]	[0.08]	[0.10]	[0.17]
Widowed	0.0355	0.0298	-0.132	0.187
	[0.11]	[0.18]	[0.24]	[0.39]
Age	-0.0439***	-0.0431	-0.101***	-0.0879
	[0.02]	[0.03]	[0.04]	[0.06]
Reciprocity and Personality traits				
Positive reciprocity	-0.00544	-0.0267	-0.00207	-0.0599
	[0.01]	[0.02]	[0.03]	[0.04]
Negative reciprocity	-0.00789	-0.0210	-0.00351	-0.0281
	[0.01]	[0.02]	[0.03]	[0.05]
Conscientiousness	0.0637***	0.0982***	0.177***	0.245***
	[0.01]	[0.02]	[0.03]	[0.04]
Openness	0.0387***	0.0316	0.0981***	0.0651
	[0.01]	[0.02]	[0.03]	[0.05]
Extraversion	0.0311**	0.0445*	0.0813***	0.0834*
	[0.01]	[0.02]	[0.03]	[0.05]

Appendix Table 2: (continued)

	Model 1	Model 2	Model 3	Model 4
	Quasi ML		Ordered logit	
	Dependent variable: Job satisfaction			
	Private	Public	Private	Public
Agreeableness	0.0495***	0.0118	0.127***	0.0348
	[0.01]	[0.02]	[0.03]	[0.05]
Neuroticism	-0.102***	-0.117***	-0.228***	-0.256***
	[0.01]	[0.02]	[0.03]	[0.05]
Observations	5031	1926	5031	1926
McFadden R2			0.106	0.066
AIC	4075.2	1585.0	18089.8	7178.8
BIC	4225.2	1713.0	18298.6	7356.9

Note: robust standard errors in brackets, * p<0.05, ** p<0.01, *** p<0.001

BIOGRAPHICAL NOTE

Markus Tepe is Senior Researcher at the Collaborative Research Center “Transformations of the State”, University of Bremen.

Telephone: +49 441 798-4563
E-Mail: markus.tepe@uni-oldenburg.de
Address: Carl von Ossietzky University Oldenburg, Center for Social Science Methodology, Ammerlaender Heerstr. 114-118, 26111 Oldenburg