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Where does the good shepherd go? Civic virtue and sorting into public sector employment

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Where Does the Good Shepherd Go? Civic Virtue and Sorting into Public Sector Employment

Omar Adam Ayaita, Filiz Güral, Philip Yang

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Where Does the Good Shepherd Go?

Civic Virtue and Sorting into Public Sector Employment

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Abstract

Several studies have analyzed different motives to work in the public versus private sector. Some studies focus on prosocial motivation, others focus on need for security (risk aversion). However, the study of prosocial motivation in the context of public sector employment has largely focused on altruism and neglected other forms of prosocial motivation, in particular civic virtue, the motive to contribute to the society. In addition, it is unclear whether the positive relationship between prosocial motivation and public sector employment is due to selection at the career start or socialization during the career. Our study extends the understanding of the motivational basis of public sector employment by considering civic virtue in addition to altruism and risk aversion and by investigating selection and socialization. Using a largely representative, longitudinal data set of employees in Germany including 63,101 observations of 13,673 different individuals, we find that civic virtue relates positively to public sector employment beyond altruism and risk aversion. We find evidence on selection and no evidence on socialization as an explanation for this result. Our study offers important insight into the motivational basis of public versus private sector employment and has implications for employers' attempts to attract and retain suitable employees.

Keywords: Civic virtue; engagement; prosocial motivation; public sector employment; selection; socialization.

JEL classification: H0, H1, J45, M5

1. Introduction

A considerable amount of research has investigated what motivates individuals to work in the public sector. Some studies focus on prosocial motivation, the desire to support other people's well-being (Grant, 2008), because public sector employment may often be accompanied by directly serving other individuals and the community. Research on prosocial motivation has largely focused on altruism (e.g., Andreoni, 1990; Khalil, 2004; Konow, 2010) and its consequences on volunteering (e.g., Carpenter and Myers, 2010; Unger, 1991). Altruism has been found to relate positively to public sector employment (Dur and Zoutenbier, 2014, 2015).¹ Considering benefits such as high job security and secured pensions, which are usually associated with the public sector, it is also plausible that the need for security or the tendency to avoid risks may influence the probability to work in the public sector. Several studies find positive associations between risk aversion and public sector employment (e.g., Bellante and Link, 1981; Dohmen and Falk, 2010; Pfeifer, 2011; Roszkowski and Grable, 2009).

Different questions remain open in this literature. First, do other forms of prosocial motivation also relate positively to public sector employment, or only altruism, a specific form of prosocial motivation? Prosocial motivation can have different forms: the motive to be there for those in the closer environment (altruism) and the motive to contribute to

¹ Some articles in this research area study intrinsic motivation (Crewson 1997; Frank and Lewis 2004; Georgellis et al. 2011; Houston 2000; Serra et al. 2011) and interpret the findings in the context of public service motivation, a construct that is related to prosocial motivation (Perry 1996; Perry and Wise 1990; Perry et al. 2010).

the society as a whole (civic virtue).² The relationship between civic virtue and public sector employment has barely been investigated; one exception is Luechinger et al. (2010). This lack of literature is particularly interesting considering the high relevance of civic virtue for good government (Bowles and Hwang, 2008). Our study contributes to the literature by analyzing how civic virtue relates to public sector employment in addition to altruism and risk aversion using a scale for civic virtue and a large longitudinal data set. Only employers who understand the entire set of motives of their employees will be able to attract and retain suitable individuals and to design appropriate incentive structures (Delfgaauw and Dur, 2007, 2008, 2010).

A second open question is whether the relationship between personal motives and public sector employment is due to selection, including self-selection (individuals with specific motives are sorted into the public sector) and/or due to socialization (personal motives tend to change during the employment in a specific sector). Gregg et al. (2011), using unpaid overtime as a measure of prosocial behavior, find no evidence of different socialization and conclude that higher values of prosocial behavior in the public sector are due to selection. Similarly, Dur and Zoutenbier (2015) find that public sector employees are higher in altruism, on average, even at zero years of work experience. We extend this literature by separately studying selection effects – using the year before the career start – and socialization effects – using fixed-effects regressions –, and by considering civic virtue in these analyses. This increases the understanding of the relationship between personal motives and sector of employment.

² We borrow the term “civic virtue” from the organizational citizenship behavior (OCB) literature (Organ 1988, pp. 12–13).

The theoretical basis of our study is the person-organization (P-O) fit theory (Kristof, 1996). According to this theory, individuals rather choose and are chosen by organizations that match their characteristics to maximize the fit between the person and the organization. Better fit is typically associated with a decrease in turnover (Kristof-Brown et al., 2005; O'Reilly III et al., 1991), an increase in organizational commitment (Kim, 2012; O'Reilly III et al., 1991), an increase in contextual performance or extra-role behavior (Lauver and Kristof-Brown, 2001), and an increase in job satisfaction (Kim, 2012; Kristof, 1996; Lauver and Kristof-Brown, 2001; O'Reilly III et al., 1991; Steijn, 2008). It is, hence, beneficial not only for the employees but also for the success of the whole organization. In line with this theory, it can be expected that individuals with higher prosocial motivation tend to be sorted into the public sector because their motives fit the nature of public sector employment more than private sector employment. We argue that this may not only hold for altruism but also – and particularly – for civic virtue, because public sector jobs may often allow an engagement for the society as a whole and not only for specific individuals as part of the work.

Using largely representative data from the German Socio-Economic Panel (Wagner et al., 2007) with 63,101 observations of 13,673 different individuals, we find that civic virtue is significantly and positively related to public sector employment beyond altruism and risk aversion. With respect to selection, our results show that individuals with higher civic virtue are attracted to (or selected by) the public sector. In contrast, fixed-effects regressions do not indicate that public and private sector employees are socialized in different ways during the career.

The article is structured as follows. First, we analyze P-O fit to derive hypotheses on the relationship between civic virtue and public sector employment as well as on selection and socialization effects. We then present our methods, including details about the

construction of the sample and the variables used in the analysis. The results section reports and describes our findings, the last section discusses the results and concludes.

2. Theoretical framework and related literature

2.1 Person-organization fit and public sector employment

According to the person-organization (P-O) fit theory (Kristof, 1996; Judge and Ferris, 1992), employees tend to be more satisfied, show more organizational commitment and are more likely to stay in an organization when there is a fit between the fundamental characteristics of the employed person and the organization (Kristof, 1996, pp. 4–5, 25; Kristof-Brown et al., 2005, p. 310). A good P-O fit can be achieved either in a complementary way, that is, the employee has characteristics that the organization demands, or in a supplementary way, which means that the person and the organization are similar in their fundamental characteristics (Kristof, 1996, p. 3; Kjeldsen and Jacobsen, 2013, p. 902).

The latter type of P-O fit – the similarity between the person and the organization – relies on the attraction-selection-attrition (ASA) model (Schneider, 1987). The ASA model states that individuals are attracted to and selected by organizations with which they have similar overall characteristics. The similarity between employees and the organization is reinforced by the phenomenon that less similar individuals rather leave the organization (*ibid.*, p. 442).

For this reason, individuals with specific motives may tend to be employed in those sectors that fit their personality. Individuals with personal motives that reasonably fit public sector jobs are then expected to be employed in the public sector more often than other individuals (Carpenter et al., 2012).

One mechanism through which such a fit can be realized is the following. Individuals may enter the public sector (and stay there) to realize a self-concept. Those with a particular set of values, missions, and moral goals rather work in a sector that fits this self-concept than in a sector where other values may be dominant. (For more information on the relationship between values and public sector employment see Perry et al., 2010, p. 682; Vandenabeele, 2007, p. 547.)

2.2 Civic virtue and public sector employment

Prosocial motivation can be defined as the desire to support other people's well-being by contributing to the society or in the closer environment (Grant, 2008). We focus on civic virtue, which is directed toward the society as a whole and not toward specific individuals in the closer environment (altruism).

(Many) work activities in the public sector serve the community. Of course, there are also private sector jobs that are important for society, and private sector employees can have prosocial motives (Van Witteloostuijn et al., 2017, p. 20). However, in the public sector, service to the society is often the primary goal of the organization and is directly experienced in job activities, which is less common in private sector positions (see also Perry et al., 2010, pp. 681–682). Consequently, Brewer (2003) finds that public sector employees manifest more civic participation, and other studies demonstrate that public employees are more likely to vote in elections (Garand et al., 1991; Watson, 1997; Wolfinger and Rosenstone, 1980).

We therefore predict that civic virtue is positively related to public sector employment, beyond altruism (Dur and Zoutenbier, 2014, 2015) and risk aversion (e.g., Bellante and Link, 1981; Dohmen and Falk, 2010; Pfeifer, 2011; Roszkowski and Grable, 2009).

Hypothesis 1: Civic virtue relates positively to public sector employment.

2.3 Selection versus socialization

There is little reason to expect that socialization processes during the career drive the potential differences between public and private sector employees with respect to civic virtue. Previous literature hints to a “reality shock”, that is, declines in prosocial motivation after the job is entered (Blau, 1960; Kjeldsen and Jacobsen, 2013, p. 915). However, this phenomenon is not unique for the public sector (Blau, 1960; Van Maanen, 1975), but has been found to occur in the private sector as well (Kjeldsen and Jacobsen, 2013). There is evidence that the decline in prosocial motivation is stronger in the private sector (Kjeldsen and Jacobsen, 2013) or – when a behavioral measure is used and a longer time span is considered – in the public sector (Buurman et al., 2012). Overall, the evidence is not clear with regard to differences in socialization.

On the other hand, based on the P-O fit theory and the existing evidence (Dur and Zoutenbier, 2015; Gregg et al., 2011), we expect that more prosocial individuals tend to be sorted into the public sector already at the start of their career (selection effects). We predict that this holds for civic virtue in particular, as individuals expect that their motive to contribute to the society can usually be fulfilled in the public more than in the private sector.

Hypothesis 2: The association between civic virtue and public sector employment is explained by selection at the career start and not by differences in socialization during the career.

3. Data and variables

3.1 Sample

We test our hypotheses by analyzing panel data from the Socio-Economic Panel (SOEP)³ (Wagner et al., 2007), a largely representative data set of the population in Germany. This data set offers detailed information on individuals' biographies, occupational development, and personality over time. Germany is a particularly good institutional example for our analysis: It is a large Western country with an extensive public sector, and several branches in Germany include both public and private sector positions.

We merged data from several SOEP files to construct our sample. We gathered information on employment status, sector of employment, nationality, education level, employment branch, and other basic characteristics from the SOEP generated person data. More specific data about the individuals, especially their prosocial motivation, need for security, and Big Five personality traits, were taken and built from the extensive SOEP person files. Our analysis includes the years 2005–2014.

To guarantee a relatively homogenous sample, we do not consider self-employed individuals and our analysis of employees is restricted to those who work either full- or part-time and have at least a secondary school degree (the German high school degree *Abitur* or a field-specific university entrance qualification or a vocational degree). We do not consider apprentices or those in other training programs. We also exclude the observations of unemployed individuals who are engaged in job-like activities (1-euro job or work-creation program). Our choices follow the literature (Dohmen and Falk, 2010,

³ Socio-Economic Panel (SOEP), data for years 1984-2014, version 31, SOEP, 2015, doi: 10.5684/soep.v31.

p. F264). After these restrictions, the final sample consists of 63,101 observations of 13,673 different individuals.

More information on the construction of the data set is given in the Appendix.

To extend our analysis beyond employees in the workforce and to investigate sorting patterns, we build an additional sample based on the SOEP data where we observe individuals in the year before the first labor market entry.⁴ In this way we gather information on their personal motives that are not influenced by job-market experiences, hence we capture selection patterns without possible reverse causality.

3.2 Measures

The dependent variable *Public sector* captures whether an individual is employed in the public or private sector. It is a dummy variable with possible values of 1 (public sector) or 0 (private sector). The item in the SOEP questionnaire is formulated as follows: ‘Do you work for a public sector employer?’ (see Table 1).⁵

The main explanatory variable *Civic virtue* captures how important it is for the individual to be politically and/or socially involved (see Table 1). We also consider another form of prosocial motivation with the variable *Altruism*, which captures how

⁴ This sample is constructed in the following way. We only keep the observations of individuals for which all of the following criteria hold: (1) no full-time work experience, (2) not regularly employed, (3) regularly employed in the next year, (4) secondary school degree, no training status, and no unemployment program in the next year.

⁵ In this article, we present the formulations from the English version of SOEP (accessible at http://www.diw.de/en/diw_02.c.222729.en/questionnaires.html). The respondents answered to the German items (see http://www.diw.de/de/diw_02.c.238114.de/frageboegen_methodenberichte.html).

important it is for the individual to be there for others (see Dur and Zoutenbier, 2014, p. 145; Dur and Zoutenbier, 2015, p. 349; Becker et al., 2012, p. 463). Both measures are originally on a Likert scale from 1 to 4, ranging from ‘Very important’ to ‘Not at all important’. We use the inverse of each variable so that higher values correspond to higher prosocial motivation. In addition we consider need for security, measured by the variable *Risk aversion*, which consists of one (inverted) item asking for the individuals’ readiness to take risks. We hereby follow Dohmen and Falk (2010) and Pfeifer (2011). This variable is also recoded such that higher values correspond to higher risk aversion. Each variable is z-standardized for the analysis (mean = 0 and standard deviation = 1).

Table 1: Operationalization of main variables

Variable	Item	Scale
<u>Dependent variable</u>		
Public sector	• Do you work for a public sector employer?	Dummy
<u>Main explanatory variables</u>		
Prosocial motivation		
Civic virtue	• Different things are important to different people. How important are the following things to you? –Being politically and/or socially involved	Ordinal (1–4)
Altruism	• Different things are important to different people. How important are the following things to you? –Being there for others	Ordinal (1–4)
Need for security		
Risk aversion	• Would you describe yourself as someone who tries to avoid risks (risk-averse) or as someone who is willing to take risks (risk-prone)?	Ordinal (0–10)

We use a wide range of control variables to hold factors constant that could otherwise bias the findings because they may be associated with both the explanatory variables and the dependent variable. Our choices with respect to the control variables largely follow

Dohmen and Falk (2010) and Dur and Zoutenbier (2015), who analyze public sector employment using the SOEP data.

On the one hand, we include biographical information and data on education and experience: age, female (1 = yes), married (1 = yes), German citizenship (1 = yes), migration background (1 = yes), college degree (1 = yes), experience in full-time jobs (years), and experience in part-time jobs (years). On the other hand, we include the Big Five personality traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism, which are computed through a factor analysis of 15 SOEP items designed for this purpose.⁶ Each personality variable is z-standardized. A full overview of our control variables is given in Table A1 in the Appendix.

For a robustness check, we additionally use behavioral measures of prosocial motivation. The variable *Voluntary activities* measures how often the individual is voluntarily engaged in clubs or social services. *Helping behavior* captures how often the individual helps friends, relatives, or neighbors. Both variables are – after recoding – scaled from 1 (‘Never’) to 4 (‘At least once a week’) and z-standardized for the analysis. For another robustness check, we consider different branches that include both public and private sector positions: education, health, and other service jobs (see Table A1).

⁶ In addition, we check what happens if each Big Five variable is constructed as the average score (instead of a factor score) of the three respective items. All items that are negatively related to the construct are inversed beforehand. We find no major changes in our results.

4. Results

Table 2 reports the descriptive statistics and pairwise correlations. As shown, 31% of the individuals in our sample are employed in the public sector.⁷ Table A2 in the Appendix reports the summary statistics of all variables used in the regressions.

Table 2: Descriptive statistics and bivariate correlations

Variables	<i>M</i>	<i>SD</i>	1	2	3
1 Public sector	0.31	0.46			
<u>Prosocial motivation</u>					
2 Civic virtue	0	1	0.15***		
3 Altruism	0	1	0.04***	0.15***	
<u>Need for security</u>					
4 Risk aversion	0	1	0.06***	−0.09***	0.00

Note: This table reports the means and standard deviations of our dependent variable (public sector employment) and main explanatory variables, as well as the correlations between them. All main explanatory variables are z-standardized. The sample size is 63,101 observations. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

4.1 Civic virtue and public sector employment

In Table 3, we report how civic virtue, in addition to altruism and risk aversion, relates to public sector employment. We thereby test Hypothesis 1. Our results show marginal effects from probit regressions in which the dependent variable is public sector

⁷ We additionally check whether there are considerable correlations (-0.25 or ≥ 0.25) between our main explanatory variables and any of the Big Five traits. This is not the case, which supports the idea that civic virtue, altruism, and risk aversion capture distinct dimensions of personality (or personal motives).

employment.⁸ The Pseudo R-squared value of 7.2% in the last model, which means that approximately 7.2% of the variance in the dependent variable is explained by the explanatory variables, is comparable to the (Pseudo) R-squared values reported in previous literature (Dohmen and Falk, 2010, p. F265; Dur and Zoutenbier, 2015, p. 354).

Civic virtue, the motive to contribute to the society, relates positively and significantly to public sector employment. Specifically, an increase in civic virtue by one standard deviation – which amounts to approximately 0.72 points on the scale from 1 to 4 – is associated with an increase in the probability of public sector employment by 5.0 percentage points (pp) on average when all other factors are held constant (Model 5). Relating this marginal effect to the overall probability of public sector employment (30.8%), the increase by 5.0 pp corresponds to 16.2%. The results support Hypothesis 1.

The effect of altruism – including civic virtue in the model – is much weaker and is estimated to 0.6 pp. Previous literature also finds positive associations between prosocial motivation and public sector employment (e.g., Brewer, 2003, p. 14). It is interesting, however, that the motive of societal engagement (civic virtue) is apparently more important for public sector employment than the motive to be there for others (altruism). The difference between the coefficients of civic virtue and altruism is significant (all explanatory variables are z-standardized).⁹

⁸ We use average marginal effects, calculated over all values of the explanatory variables. If we calculate the marginal effects at the means of the explanatory variables, we do not find any major differences to our results.

⁹ If civic virtue is dropped from the regression, then the coefficient for altruism increases (1.3 pp) and is significant at the 1% level. This may explain why other literature finds robust and considerable effects for altruism (Dur and Zoutenbier 2014, 2015).

As expected, risk aversion also relates positively to public sector employment (2.3 pp). The finding is in line with previous research on the role of risk aversion in public sector employment (e.g., Bellante and Link, 1981, p. 411; Pfeifer, 2011, p. 88). In our model, the coefficient for risk aversion is significantly smaller than civic virtue and significantly larger than altruism.

Table 3: Civic virtue and public sector employment

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
<u>Prosocial motivation</u>					
Civic virtue	0.070*** (0.004)	0.069*** (0.004)	0.072*** (0.004)	0.051*** (0.004)	0.050*** (0.004)
Altruism	-	0.008** (0.004)	0.008** (0.004)	0.006 (0.003)	0.006* (0.003)
<u>Need for security</u>					
Risk aversion	-	-	0.035*** (0.003)	0.020*** (0.003)	0.023*** (0.003)
<u>Controls</u>					
Bio/educ./exp.	-	-	-	✓	✓
Big Five personality traits	-	-	-	-	✓
Observations	63,101	63,101	63,101	63,101	63,101
Pseudo R-squared	0.019	0.020	0.024	0.070	0.072

Note: This table reports average marginal effect estimates of probit regressions. In all models, the binary dependent variable is public sector employment. The main explanatory variables are standardized variables on civic virtue, altruism, and risk aversion. Stepwise regressions include control variables on bio/educ./exp. (age, gender, marital status, German citizenship, migration background, college degree, experience in full-time jobs, and experience in part-time jobs) and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism). Robust standard errors clustered at the individual level in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

We perform several robustness checks. First, we use behavioral measures of prosocial motivation (voluntary activities and helping behavior) instead of civic virtue and altruism. The results of this robustness check are presented in Table A3 in the Appendix. They are very similar to our main results in Table 3. Voluntary activities relate significantly and positively to public sector employment, meaning that those who are more often engaged

as volunteers in clubs or social services have a higher probability to be employed in the public sector on average, when all other factors are held constant. In contrast, helping behavior – how often somebody helps friends, relatives, or neighbors – is not significantly related to public sector employment. Risk aversion is still significantly and positively related to public sector employment, with a coefficient that is significantly smaller than voluntary activities and significantly larger than helping behavior.

As a second robustness check, we estimate our main regression (Model 5 in Table 3) for different branches. It can be argued that the findings on public versus private sector employment rather reflect differences between employment branches, as the common branches in the public sector (for example, education) are often different from the common branches in the private sector (for example, technical jobs). In line with this reasoning, it is claimed that instead of sectors one should consider jobs or branches (Bright, 2007, pp. 376–377; Kjeldsen and Jacobsen, 2013, pp. 917–918). We leave the question of whether the primary sorting mechanism is sorting into branches – with sorting into the public versus private sector being secondary –, or whether the primary sorting mechanism is sorting into the public versus private sector – with the branch being determined afterward –, open. If the sorting into branches is primary, then it is more appropriate to look into specific branches and to observe which individuals tend to be employed in the public versus private sector within a branch.

Table A4 in the Appendix presents the results of this robustness check. We estimate our main model of public sector employment separately for different branches that include a considerable number of both public and private sector positions: education (5,135 observations in the public and 777 in the private sector), health (3,870 observations in the public and 4,142 in the private sector), and other service professions (9,568 observations in the public and 18,687 in the private sector). We find the positive

association between civic virtue and public sector employment within the health branch (comparing public sector health professionals with private sector health professionals) and within the service branch. Only within the education branch we do not find a significant association between civic virtue and public sector employment. This indicates that in the education branch other factors may be more important in determining whether an individual works in the public sector (e.g., public school) or in the private sector (e.g., private school). A significant effect of altruism – beyond civic virtue – is not found in any of the three branches. Risk aversion is positively related to public sector employment within the education branch and within the service branch.

Third, we check whether our results hold for differently educated individuals, in particular for those without a college degree and those with a college degree (all individuals in the sample have at least a secondary school degree). The results in the different education groups are similar to the overall results for the public sector (see Table A5). Civic virtue relates positively to public sector employment for college graduates and for other employees. The estimated marginal effect is larger in the group of college graduates, but in this group the baseline (overall percentage of public sector employees) is also nearly double as large. At the same time, the coefficient for altruism is not significant in any of the two groups, and risk aversion relates positively to public sector employment in both groups.

As a last robustness check, we run our main regression separately for employees with different levels of work experience (see Table A6): job starters (fewer than 2 years of work experience), employees with a relatively short or moderate duration of work experience (between 2 and 20 years), and highly experienced employees (at least 20

years).¹⁰ The positive association between civic virtue and public sector employment holds at all these levels of work experience (for similar results, using behavioral measures of prosocial motivation, see Booth et al., 2016 and Carlsson et al. 2014). The association between altruism and public sector employment is not robust across experience levels. Risk aversion relates positively to public sector employment at all experience levels.

4.2 Selection: civic virtue before the career start

To investigate how the positive association between civic virtue and public sector employment occurs, in the next step we relate the personal motives in the year before the labor market is entered the first time to the probability of public versus private sector employment in the next year. By considering the time before the career start, we avoid any socialization effects that might develop during the career. This analysis is conducted with a subset of individuals, who are observed in year prior to the first employment and in the first year of employment.

Table 4 presents the results of the selection analysis. A part of the pattern that we observe for the whole sample is already visible and significant in the year prior to initial employment. On average, graduates with a civic virtue score that is one standard deviation above the mean are 3.5 percentage points more likely to enter the public versus private sector when all other factors are equal. Relating this marginal effect to the overall probability of entering the public versus private sector in the next year (27.5%), the effect of 3.5 pp is equivalent to 12.7%. The result is a first support for Hypothesis 2 and indicates that selection drives the positive association between civic virtue and public sector

¹⁰ For building different experience groups, we use a variable that approximately captures the total work experience in years. One year of part-time experience is treated as equivalent to half a year of full-time experience.

employment. To some extent the result resembles Dur and Zoutenbier (2015), who find a positive association between altruism and public sector employment at zero years of work experience, when civic virtue is not included (p. 360–361).

Table 4: Selection into the public versus private sector by civic virtue before the career start

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
<u>Prosocial motivation</u>					
Civic virtue	0.054*** (0.015)	0.050*** (0.015)	0.052*** (0.015)	0.037** (0.015)	0.035** (0.015)
Altruism	-	0.032** (0.015)	0.033** (0.015)	0.026* (0.015)	0.023 (0.015)
<u>Need for security</u>					
Risk aversion	-	-	0.039*** (0.015)	0.020 (0.015)	0.025 (0.015)
<u>Controls</u>					
Bio/educ./exp.	-	-	-	✓	✓
Big Five personality traits	-	-	-	-	✓
Observations	873	873	873	873	873
Pseudo R-squared	0.013	0.017	0.024	0.071	0.077

Note: This table reports average marginal effect estimates of probit regressions. In all models, the binary dependent variable is public sector employment in the next year. The models observe individuals in the year before they enter the job market the first time and compare those who enter the public sector in the next year with those who enter the private sector in the next year. The main explanatory variables are standardized variables on civic virtue, altruism, and risk aversion. Stepwise regressions include control variables on bio/educ. (age, gender, marital status, German citizenship, migration background, and college degree) and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism). Robust standard errors in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

4.3 Socialization: changes in civic virtue during the career

We test socialization effects with the help of fixed-effects regressions: By holding each individual constant, only intra-individual changes – changes within individuals over time – are considered. We separate the sample into observations of public sector employment on the one hand and observations of private sector employment on the other hand instead of including the public sector variable as an explanatory variable, as the variance of public sector employment within individuals is small (only few individuals switch the sector over the ten years of consideration).

The dependent variable is now civic virtue. In addition we test how altruism and risk aversion change over time. All these variables are z-standardized. As the main explanatory variable, we use tenure. This variable captures how long an individual has been working in the current organization (specifically, for the current employer). We use tenure – and not general work experience – to make sure that work experience is gathered in this particular sector and not in the other sector.¹¹ All models include the Big Five personality traits as controls, to exclude the possibility that our results are driven by general personality developments.

As Table 5 shows, we do not find a robust trend in civic virtue. The “reality shock” found in previous studies – with decreasing levels of prosocial motivation over the career (Blau, 1960; Kjeldsen and Jacobsen, 2013, p. 915) – is perhaps indicated by the negative coefficients but not significant in our data. The trend of altruism is not significant either

¹¹ We do not consider quadratic terms of tenure because we only have up to three years in which we observe, for example, civic virtue and altruism (we use values from 2004, 2008, and 2012), which limits the possibility to examine more complex patterns of changes.

in any of the sectors. Risk aversion tends to increase over the career, which holds for both sectors and apparently slightly more for the public sector.

Overall, differences in socialization cannot explain the association between civic virtue and public sector employment, as the motives appear to develop similarly in both sectors. This further supports Hypothesis 2, meaning that selection and not socialization is the main driver of public sector employees' higher civic virtue. Our results are consistent with Gregg et al. (2011), who do not find any indication of socialization effects with respect to prosocial behavior in the public sector compared to the private sector.

Table 5: Fixed-effects regressions: socialization effects with increasing tenure

Variables	Prosocial motivation		Need for security
	Civic virtue	Altruism	Risk aversion
<u>Public sector:</u>			
Tenure	-0.004 (0.004)	0.001 (0.004)	0.012*** (0.003)
Observations	19,439	19,439	19,439
R-squared	0.001	0.001	0.005
<u>Private sector:</u>			
Tenure	-0.001 (0.002)	0.002 (0.002)	0.009*** (0.001)
Observations	43,611	43,611	43,611
R-squared	0.001	0.002	0.004

Note: This table reports coefficients of linear regressions with individual fixed effects. The dependent variable is a standardized measure of civic virtue, altruism, and risk aversion, respectively. The main explanatory variable is tenure (work experience in the current organization, in years). The first panel is restricted to employees in the public sector, while the second panel is restricted to employees in the private sector. All models control for the Big Five personality traits. Robust standard errors clustered at the individual level in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

5. Discussion and conclusion

Prosocial motivation and its relationship with employment in the public sector have been analyzed in various contexts (e.g., Dur and Zoutenbier, 2014, 2015; Georgellis et

al., 2011), as well as the relationship between need for security and public sector employment (e.g., Bellante and Link, 1981; Pfeifer, 2011; Roszkowski and Grable, 2009). Our study fills a gap by differentiating between two different forms of prosocial motivation: civic virtue, the motive to contribute to the society, and altruism, the motive to be there for others in the closer environment. We secondly contribute to the question of selection before the career versus socialization during the career (Dur and Zoutenbier, 2015; Kjeldsen and Jacobsen, 2013).

Building on the P-O fit theory (Kristof, 1996) and the ASA model (Schneider, 1987), we hypothesize that civic virtue is positively related to employment in the public sector beyond altruism and risk aversion, holding other personal characteristics constant. We further hypothesize that this relationship can be explained by selection rather than by socialization.

Using longitudinal panel data with employees in Germany, we find support for these hypotheses. Civic virtue relates positively to public sector employment even more strongly than altruism and risk aversion. The results largely hold when we use behavioral measures of prosocial motivation, they hold within specific branches (health and service), for differently educated individuals (without college degree and with college degree), and at different levels of work experience. By considering the year before first employment and additional fixed-effects regressions, we are able to disentangle selection and socialization effects. We find that higher scores in civic virtue increase the probability of entering the public sector in the next year (selection), whereas no significant changes in civic virtue over the career are found (socialization).

Our study is limited in different respects. First, the personality and motive measures in the SOEP data set are based on a very limited number of items, which may cast doubt on the precision of these measures. This weakness is perhaps compensated by the fact

that the SOEP allows a detailed analysis of both selection and socialization effects, as individuals are observed before and after labor market entry. One of the few exceptions of studies that consider selection effects of prosocial motivation is Kjeldsen and Jacobsen (2013).

A second limitation is that our study is based on employees in Germany. In other countries, the situation may be different for cultural reasons (Kim et al., 2013; Ritz and Brewer, 2013). For example, the structure of the public sector can be sensitive to historical developments in specific countries. Future studies can seek to investigate whether the results hold in a more general manner and what the determinants of possible differences between countries are.

Third, although we differentiate between different branches in a robustness check, our analysis of public versus private sector employment is still relatively broad. The jobs that are compared, such as service jobs in the public sector with service jobs in the private sector, are perhaps still so different that they may not have the same target group of applicants. Future studies can focus on branches that are more specific and that nevertheless have both public and private sector positions (Kjeldsen and Jacobsen, 2013). As our results indicate, comparisons between public and private sector employees can partly lead to different findings dependent on the branch. Focusing on more specific branches may further enrich understanding.

Fourth, our selection analysis includes the year before employment starts, but the development of motives in earlier years is not observed. The decision on the employment sector has possibly already been made or is at least relatively fixed at an earlier time (for example, through the field chosen in vocational or college education). It is preferable to analyze the origins of civic virtue and the impact of those early developments on later employment sector. It is important to understand civic virtue and prosocial motivation in

general as a process, and further studies with longitudinal data are helpful. These might also analyze the personal motives of sector switchers who change from the public to the private sector or vice versa.

Our study suggests that a person-organization fit in the public sector exists, but only to a limited extent. The association between civic virtue and public sector employment is significant, but not very strong. Consequently, employers in the public sector for whom civic virtue is particularly important can investigate mechanisms to attract applicants with high civic virtue more consistently. Merely offering job security may not be the best mechanism, as it attracts those who have a high need for security, but not necessarily those who score high in civic virtue – we note that need for security and civic virtue are negatively correlated (Table 2). It should additionally be noted that the average values of civic virtue in the population – both in the public and in the private sector – are relatively low (2.25 respectively 2.01 on a scale from 1 to 4) and much lower than the averages of altruism (see Table A2 in the Appendix). A practical question is how to support the civic virtue of employees during the career, thereby strengthening good person-organization fit, organizational commitment, and the contribution of public sector organizations to the society.

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Appendix

Construction of personality variables over the whole time of investigation (2005–2014)

Because different personality variables are only available in specific, different years (for example importance of life domains, including civic virtue and altruism, in 2004, 2008, and 2012; Big Five personality traits in 2005, 2009, and 2013), we use these personality information from a particular year also for the next 3 years. We never take personality variables from the future because we want to avoid reverse causality (personality influenced by later job experiences). Our study therefore examines how public sector employment is associated with certain personality traits 0–3 years *before* the observed employment.

Table A1: Operationalization of control variables

Variable	Item	Scale
<u>Control variables</u>		
Biographical/education/experience		
Age	<ul style="list-style-type: none">• Your birth year	Metric
Female	<ul style="list-style-type: none">• Your sex	Dummy
Married	<ul style="list-style-type: none">• What is your marital status?	Dummy
German citizenship	<ul style="list-style-type: none">• Do you have German citizenship?	Dummy
Migration background	<ul style="list-style-type: none">• Do you have direct or indirect migration background?	Dummy
College degree	<ul style="list-style-type: none">• Did you obtain a college degree?	Dummy
Experience (full-time)	<ul style="list-style-type: none">• Are you currently employed full-time?	Metric
Experience (part-time)	<ul style="list-style-type: none">• Are you currently employed part-time?	Metric
Big Five personality traits		
Openness	<ul style="list-style-type: none">• I am original, someone who comes up with new ideas.• I am someone who values artistic, aesthetic experiences.• I am imaginative.	Ordinal (1–7)
Conscientiousness	<ul style="list-style-type: none">• I am a thorough worker.• I am somewhat lazy.• I am effective and efficient in completing tasks.	
Extraversion	<ul style="list-style-type: none">• I am communicative, talkative.• I am outgoing, sociable.• I am reserved.	
Agreeableness	<ul style="list-style-type: none">• I am forgiving.• I am reserved.• I am considerate and kind to others.	
Neuroticism	<ul style="list-style-type: none">• I am a worrier.• I am nervous.• I am relaxed, able to deal with stress.	
<u>Robustness checks</u>		
Prosocial behavior		
Voluntary activities	<ul style="list-style-type: none">• Which of the following activities do you take part in during your free time? Please check off how often you do each activity. –Volunteer work in clubs or social services: at least once a week; at least once a month; less often; never	Ordinal (1–4)
Helping behavior	<ul style="list-style-type: none">• Which of the following activities do you take part in during your free time? Please check off how often you do each activity. –Helping out friends, relatives or neighbors:	Ordinal (1–4)

at least once a week; at least once a month; less often;
never

Branches

Education	<ul style="list-style-type: none"> What sector of business or industry is your company or institution active in for the most part? 	Dummy
Health		Dummy
Service		Dummy

Table A2: Descriptive statistics of all variables

Variable	Mean		Std. dev.	
Public sector	0.308		0.462	
Variables	Public sector		Private sector	
	Mean	Std. dev.	Mean	Std. dev.
<u>Prosocial motivation</u>				
Civic virtue	2.247	0.722	2.008	0.699
Altruism	3.234	0.546	3.186	0.547
<u>Need for security</u>				
Risk aversion	5.532	2.122	5.247	2.156
<u>Biographical/education/experience</u>				
Age	46.118	10.401	43.564	10.611
Female	0.566	0.495	0.428	0.496
Married	0.679	0.478	0.646	0.467
German citizenship	0.984	0.197	0.960	0.125
Migration background	0.114	0.370	0.163	0.318
College degree	0.425	0.416	0.223	0.494
Experience (full-time)	17.891	11.776	17.411	11.407
Experience (part-time)	4.078	6.478	2.857	5.568
<u>Big Five personality traits</u>				
Openness	0.073	0.778	0.014	0.784
Conscientiousness	0.054	0.773	0.090	0.754
Extraversion	0.054	0.852	0.015	0.851
Agreeableness	-0.010	0.786	-0.061	0.816
Neuroticism	-0.078	0.813	-0.098	0.808
<u>Prosocial behavior</u>				
Voluntary activities	1.828	1.086	1.620	0.998
Helping behavior	2.476	0.738	2.504	0.736
<u>Branches</u>				
Education	0.266	0.133	0.018	0.442
Health	0.201	0.296	0.097	0.400
Service	0.496	0.496	0.436	0.500

Table A3: Robustness check: behavioral measures of prosocial motivation

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
<u>Prosocial behavior</u>					
Voluntary activities	0.042*** (0.004)	0.044*** (0.004)	0.046*** (0.004)	0.037*** (0.004)	0.036*** (0.004)
Helping behavior	-	-0.015*** (0.004)	-0.013*** (0.004)	0.001 (0.004)	0.001 (0.004)
<u>Need for security</u>					
Risk aversion	-	-	0.030*** (0.003)	0.017*** (0.003)	0.021*** (0.003)
<u>Controls</u>					
Bio/educ./exp.	-	-	-	✓	✓
Big Five personality traits	-	-	-	-	✓
Observations	61,008	61,008	61,008	61,008	61,008
Pseudo R-squared	0.007	0.008	0.011	0.065	0.066

Note: This table reports average marginal effect estimates of probit regressions. In all models, the binary dependent variable is public sector employment. The main explanatory variables are standardized variables on voluntary activities, helping behavior, and risk aversion. Stepwise regressions include control variables on bio/educ./exp. (age, gender, marital status, German citizenship, migration background, college degree, experience in full-time jobs, and experience in part-time jobs) and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism). Robust standard errors clustered at the individual level in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

Table A4: Robustness check: different branches

Variables	All branches	Education	Health	Service
<u>Prosocial motivation</u>				
Civic virtue	0.050*** (0.004)	0.011 (0.008)	0.029*** (0.011)	0.055*** (0.005)
Altruism	0.006* (0.003)	0.003 (0.007)	-0.006 (0.010)	-0.005 (0.005)
<u>Need for security</u>				
Risk aversion	0.023*** (0.003)	0.014** (0.007)	0.005 (0.009)	0.029*** (0.005)
Observations	63,101	5,912	8,012	28,255
Pseudo R-squared	0.072	0.076	0.015	0.050

Note: This table reports average marginal effect estimates of probit regressions. In all models, the binary dependent variable is public sector employment. The main explanatory variables are standardized variables on civic virtue, altruism, and risk aversion. The first model includes the whole sample. The second model is restricted to employees in the education branch and compares education professionals in the public sector with education professionals in the private sector. Accordingly, the third model is restricted to health professionals in the public versus private sector. The fourth model is restricted to all other employees in the service branch. All models include control variables on bio/educ./exp. (age, gender, marital status, German citizenship, migration background, college degree, experience in full-time jobs, and experience in part-time jobs) and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism). Robust standard errors clustered at the individual level in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

Table A5: Robustness check: different education groups

Variables	All education groups	No college degree	College degree
<u>Prosocial motivation</u>			
Civic virtue	0.050*** (0.004)	0.040*** (0.004)	0.074*** (0.008)
Altruism	0.006* (0.003)	0.005 (0.004)	0.007 (0.007)
<u>Need for security</u>			
Risk aversion	0.023*** (0.003)	0.018*** (0.004)	0.037*** (0.007)
Observations	63,101	45,093	18,008
Pseudo R-squared	0.072	0.032	0.065

Note: This table reports average marginal effect estimates of probit regressions. In all models, the binary dependent variable is public sector employment. The main explanatory variables are standardized variables on civic virtue, altruism, and risk aversion. The first model includes the whole sample. The second model is restricted to employees without a college degree and compares individuals without a college degree in the public sector with individuals without a college degree in the private sector. Accordingly, the third model is restricted to employees who hold a college degree. All individuals in our sample have at least completed secondary education. All models include control variables on bio/exp. (age, gender, marital status, German citizenship, migration background, experience in full-time jobs, and experience in part-time jobs) and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism). Robust standard errors clustered at the individual level in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

Table A6: Robustness check: different work experience levels

Variables	All experience levels	Exp. <2 years	Exp. ≥ 2 and <20 years	Exp. ≥ 20 years
<u>Prosocial motivation</u>				
Civic virtue	0.050*** (0.004)	0.043*** (0.011)	0.050*** (0.005)	0.049*** (0.005)
Altruism	0.006* (0.003)	0.019* (0.010)	0.001 (0.005)	0.010* (0.005)
<u>Need for security</u>				
Risk aversion	0.023*** (0.003)	0.019* (0.011)	0.021*** (0.004)	0.026*** (0.005)
Observations	63,101	2,145	32,031	28,925
Pseudo R-squared	0.072	0.082	0.069	0.074

Note: This table reports average marginal effect estimates of probit regressions. In all models, the binary dependent variable is public sector employment. The main explanatory variables are standardized variables on civic virtue, altruism, and risk aversion. The first model includes the whole sample of employed individuals. The second model is restricted to employees in their first work years (total work experience <2 years), and compares beginners in the public sector with beginners in the private sector. Accordingly, the third model is restricted to employees with ≥2 and <20 years of experience, and the fourth model is restricted to employees with high work experience (≥20 years). All models include control variables on bio/educ. (age, gender, marital status, German citizenship, migration background, and college degree) and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism). Robust standard errors clustered at the individual level in parenthesis. * denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level.

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