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Risk aversion and the teaching profession: An analysis including different forms of risk aversion, different control groups, selection and socialization effects

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Risk Aversion and the Teaching Profession: An Analysis Including Different Forms of Risk Aversion, Different Control Groups, Selection and Socialization Effects.

Adam Ayaita and Kathleen Stürmer

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Risk Aversion and the Teaching Profession: An Analysis Including Different Forms of Risk Aversion, Different Control Groups, Selection and Socialization Effects¹

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Abstract

Risk aversion might affect current and potential teachers' reaction to reforms, in particular payment reforms. However, evidence on teachers' risk aversion in comparison to other occupations is limited. The present study is based on twelve waves of a representative German data set ($N = 18,381$) and shows that teaching relates positively to risk aversion, especially to risk aversion with respect to occupational career. Teachers score higher in risk aversion even than other civil servants. Risk-averse individuals are attracted to teaching from career outset; moreover, our results suggest an additional socialization effect during the employment that may reinforce this relationship.

Keywords: Teachers; teaching; motives; risk aversion

JEL classification: H75; I28; J20; J45; M50; O30

1. Introduction

In the present study, we investigate the relationship between risk aversion and the teaching profession and analyze both whether risk-averse individuals are attracted to teaching (selection effects) and how teaching experience relates to the development of risk aversion (socialization effects). Risk aversion can be described as the tendency to avoid risks and to favor secure options over less secure options; highly risk-averse individuals prefer secure options even they have a lower expected value (Kahneman and Tversky 1979; Holt and Laury 2002). Self-reported risk aversion predicts behavioral measures of risk aversion, including the choice of activities that are associated with risks (Dohmen et al. 2005). Moreover, risk aversion is an important determinant of economic decisions, such as self-selection into specific payment schemes or preference for job security (Dohmen and Falk 2010, 2011).

Studying teachers' risk aversion is not only theoretically relevant by enhancing our understanding of the relationship between individual motives and occupational environments, but also of practical relevance. Due to the link between risk aversion and the preference for payment schemes, teachers' risk attitude is – for example – an important factor to consider when designing teacher payment reforms. In particular, risk-averse teachers can be expected to be resistant to performance pay (Bowen et al. 2015). Performance pay would likely reduce teachers' satisfaction if they are risk-averse and – insofar as teachers' higher risk aversion is a selection effect – performance pay would attract a differently motivated workforce to the teaching profession (Dohmen and Falk 2010). Moreover, next to the relation between risk aversion and tendencies to show more secure economic behavior with regard to job stability and payment, there are indications that an individual's risk aversion may be negatively related to the willingness to try out new workplace practices (Abadi Ghadim, Pannell, and Burton 2005). For example, Howard (2013) shows that not only teachers' perceived utility of

technology for learning but also teachers' risk aversion determines their decisions to use technology in teaching. In this vein, considering teachers' risk aversion might have an additional explanatory value when discussing and investigating many teachers' resistance not only to payment reforms but also to educational reforms (e.g., Terhart 2013).

To understand whether teachers are, on average, more risk-averse than other employees, it is necessary to compare them to other professions, rather than focusing on teachers or prospective teachers alone (e.g., Heinz 2015; Richardson and Watt 2005; Watt and Richardson 2007; Watt et al. 2012). The relationship between risk aversion and teaching in comparison to other occupations has previously been analyzed by Dohmen and Falk (2010), who find a positive association (a negative relationship between readiness to take risks and teaching profession), which holds for teachers at the primary and secondary school track. Moreover, Bowen et al. (2015) find that graduate students in teacher education programs are more risk-averse, on average, than graduate students in business administration or law.

We extend this stream of research in three ways. First, in addition to general risk aversion we consider risk aversion with respect to occupational career (e.g., Pfeifer 2011), a variable that has not been considered in teacher research so far. Occupation-related risk aversion may be an even more important motive than general risk aversion in the present context, as we are interested in teachers' work-related motives and behavior. Readiness to take risks in spare time activities or other dimensions of private life is arguably not relevant for work-related motives and behavior such as attitudes toward performance pay and self-selection on the labor market, while readiness to take risks in the occupational career should be more strongly related to teachers' work-related behavior. Assessments of specific dimensions of risk aversion are in general better predictors of concrete, context-specific behaviors than the assessment of general risk aversion (Dohmen et al. 2005). Therefore, we consider

occupation-related risk aversion in addition to the established construct of (general) risk aversion.

Second, we compare teachers not only with all other employees who have a comparable education level, but also choose more specific reference groups. On the one hand, we compare teachers to those who work in a similar area: in caring jobs, which include education, health, and social care (Ayaita, Güllal, and Yang 2018; Gregg et al. 2011: 759; Dur and Zoutenbier 2015: 357). On the other hand, we compare teachers to those who have a similar occupational status: civil servants, that is, public servants with a tenured position (e.g., Battis 2017; German Civil Service Federation 2017). These analyses enhance our understanding of the motivational basis of teaching, because they help to understand whether higher risk aversion is specific to teachers even among narrower groups of employees. In particular, it is an open question whether higher risk aversion of teachers is explained by many teachers' occupational status as civil servants; in this case, we would expect teachers to be similarly risk-averse as other civil servants.

The third extension in our study is the investigation of changes over the career, which allows us to estimate whether individuals tend to become more risk-averse during their employment as teachers or whether higher risk aversion of teachers is only due to selection, including self-selection, before the employment start. It has been noted that age is positively related to risk aversion (Dohmen et al. 2005), but neither is it clear whether this relationship reflects a development within individuals or a cohort effect, nor is it clear whether teachers and other employees develop similarly in their risk aversion (Bowen et al. 2015). Selection and socialization effects have different practical implications. If teachers' risk aversion is relevant for their performance, then selection effects would possibly raise the question whether a differently motivated workforce should be attracted to teaching and whether

teacher education programs should be updated, while socialization effects would possibly point to motivational challenges during teachers' employment.

Our study is based on the waves 2005–2016 of the Socio-Economic Panel (SOEP), a representative data set of the population in Germany. This data set allows a comparison between a large number of teachers and employees from other professions. We used the same data set (with the waves 2005–2014) in our recent study Ayaita, Güral, and Yang (2018), where we analyzed the role of civic virtue for public sector employment in comparison to private sector employment. This study showed that civic virtue positively predicts public versus private sector employment, when holding other motives including risk aversion constant. With the present study we extend these findings by comparing teachers to non-teaching employees. We also extend previous teacher research that uses a single wave of the SOEP (Dohmen and Falk 2010) by including several waves. Multiple linear regression analyses are applied to test for differences in risk aversion between teachers and other professions, holding other individual characteristics constant (see also Roloff Henoch et al. 2015). We include the interaction of experience and teaching in the multiple linear regressions as a first test of possible socialization versus selection effects (see also Buurman et al. 2012; Dur and Zoutenbier 2015). Because most individuals are observed over several years, we are able to add a fixed effects analysis to investigate pure career developments, holding the individual constant (see also Ayaita, Güral, and Yang 2018).

2. Theoretical background and existing evidence

The theoretical fundament of our analysis is the person-organization fit theory (Kristof 1996), which relies on the attraction-selection-attrition model (Schneider 1987; Vandenberg 2008). This model predicts that individuals are attracted to, selected by, and more likely to stay in organizations that fit their own preferences (Schneider 1987: 440; Vandenberg 2008: 1091), so increasing homogeneity within organizations over time (Kristof 1996: 5).

Based on this model, person-organization fit theory states that an organization's attractiveness increases if the characteristics of the individual and the organization are similar ('supplementary fit') or if the organization has need of that individual's characteristics ('complementary fit') (Kristof 1996: 3; Vandenabeele 2008: 1091).

A positive relationship between teaching and risk aversion can be expected based on the idea of supplementary fit. In previous research we argued that prosocially motivated individuals, in particular those with higher civic virtue, may be attracted to the public sector because of the fit between their motives and the nature of public sector work (Ayaita, Güral, and Yang 2018). Similarly, more risk-averse individuals may be systematically attracted to the teaching profession, because the conditions of this profession overall match the characteristics and preferences of risk-averse workers.

Working as a teacher is often accompanied by relatively high job security. Most teachers are public servants (employees of the public sector), and in some countries such as Germany, teachers have the opportunity to become civil servants (lifetime public servants with a tenured position and special amenities). In contrast to other employees, civil servants do not have to pay for public pension insurance or unemployment insurance; they cannot be dismissed in normal circumstances, and they receive a secured and relatively comfortable pension after retirement. In comparison to most other jobs, then – and especially compared to the private sector – most teaching positions can be described (and are widely perceived) as relatively safe jobs.

In line with this reasoning, both general risk aversion and – with a slightly larger estimated effect – occupation-related risk aversion are empirically found to be positively related to public versus private sector employment in Germany (Ayaita, Güral, and Yang 2018; Pfeifer 2011). However, in these studies it has remained unclear whether this result also holds for the specific profession of teachers. It has been shown that for German preservice teachers, the

perceived job security is generally an important factor in choosing to become a teacher (Pohlmann and Möller 2010, 75, 80).² When comparing teachers to other occupations, a positive relationship between (general) risk aversion and teaching is found in the German context (Dohmen and Falk 2010).

In other countries, the situation may be different, as the special civil servant status is a German phenomenon. Nevertheless, most teachers are public servants in all OECD countries (OECD 2017: 183). Even without civil servant status, a public sector position may entail higher job security than in the private sector – first because payment schemes tend to be fixed rather than flexible, and second because public sector organizations are less likely to crash (Dohmen and Falk 2010: 257). Unsurprisingly, then, the evidence across different countries suggests that more risk-averse individuals are more likely to work in the public sector (e.g., Bellante and Link 1981; Buurman et al. 2012; Hartog, Ferrer-i-Carbonell, and Jonker 2002; Masclet et al. 2009; Roszkowski and Grable 2009).

There is an additional theoretical argument for an attraction of risk-averse individuals particularly to the teaching profession: This profession may appear highly familiar, so reducing the perceived risk as compared to other jobs (even compared to other jobs in the public sector with civil service positions). In this vein, Watt and Richardson (2007) show that positive prior teaching and learning experiences as a student at school are an important factor in preservice teachers' own choice of career (180, 192).

² We use the term 'preservice teachers' for university students in teacher education programs who do not teach yet (e.g., Blomberg, Stürmer, and Seidel 2011; Watt and Richardson 2007; Watt et al. 2012) and 'prospective teachers' more generally for all stages of the teaching career before becoming an expert teacher (e.g., Watt et al. 2012).

Empirical evidence supports the expectation that risk-averse individuals tend to be attracted to the teaching profession in an international context. The expectation of high job security has been identified in various countries as a relevant factor in choosing a teaching career (Watt et al. 2012). For example, preservice teachers in Australia rate the importance of job security for their career choice as relatively high (Watt and Richardson 2007: 177, 192). In the United States, graduate students in teacher education programs have been shown to be more risk-averse, on average, than graduate students in business administration or law (Bowen et al. 2015).

The attraction of risk-averse individuals to the teaching profession may be even stronger for a specific form of risk aversion that concerns the labor market (risk aversion with respect to occupational career), because individuals may expect that choosing the teaching profession minimizes career risks. Moreover, based on person-organization fit theory and the concrete assumption that risk-averse individuals tend to choose jobs with a secure occupational status, we expect teachers to be overall more risk-averse than employees in other professions, but less so when comparing them to employees with a similar occupational status. In particular, when we compare teachers to other employees in caring jobs, who work in relatively similar areas (education, health, and social care), we still expect teachers to be more risk-averse, on average. In contrast, when teachers are compared to other employees with similar occupational status (that is, teaching civil servants to other civil servants), then the relationship between risk aversion and teaching should decrease – higher risk aversion may be a general characteristic of employees with this status and not be entirely specific to the teaching profession.

It has long been discussed whether differences in personality between occupations are the result of selection, including self-selection, and/or socialization (e.g., Ayaita, Güla, and Yang 2018; Buurman et al. 2012; Dur and Zoutenbier 2015; Kjeldsen and Jacobsen 2013; Roloff

Henoch et al. 2015; Schneider 1987). A selection effect is plausible, as person-organization fit theory would predict that more risk-averse individuals are attracted to a profession that corresponds to their needs in terms of being a rather secure option. Such a selection effect is also empirically supported (Bowen et al. 2015).

However, socialization effects are an integral part of person-organization fit theory, as well: Individuals tend to adapt their personality to the organization in order to increase the fit between person and organization (Chatman 1991; Kristof 1996). There is some evidence of socialization processes among preservice teachers in their educational trainings (Blomberg, Stürmer, and Seidel 2011), which may suggest that socialization processes occur during the teaching employment as well. While risk aversion is overall positively related to age (Bowen et al. 2015: 472), risk aversion might more strongly increase during teaching employment than during non-teaching employment, which would contribute to teachers' higher risk aversion compared to other employees.

3. Method

3.1. Sample

The present study is based on the 2005–2016 waves of the Socio-Economic Panel (SOEP) (Goebel et al. 2019). The SOEP is a representative longitudinal data set of Germany's population that includes personal biographies and occupational trajectories. The survey is conducted by the German Institute for Economic Research (DIW). In 1984, a large number of households in West Germany, encompassing approximately 12,000 individuals, have been randomly selected for the survey. Each person in the household independently answers person-related questions. In principle, the same households and individuals answer the survey each year. To compensate for sample attrition and to include the East part of Germany since 1990, new households and individuals have been added to the SOEP data set since then.

Motives and personality traits have been systematically included in the SOEP since 2005, which is the starting point of our analysis. Due to its sample size and representativeness, the SOEP is a useful data set for the present analysis of differences between teachers and other employees. The longitudinal nature of the data set and the use of twelve waves make it possible to extend the important contribution by Dohmen and Falk (2010) on risk aversion and the teaching profession, which is mainly based on the 2004 wave of the SOEP.

To achieve a sample that is sufficiently homogeneous with respect to basic work-related and biographical characteristics of teachers and other individuals, we use for our analysis only observations of those who are employed full- or part-time, not self-employed, and holding an upper secondary school degree and college degree. We also exclude apprentices, interns, and those people working in special programs for unemployed. The choices are based on existing precedent (Ayaita, Güral, and Yang 2018: 12; Dohmen and Falk 2010: 264). We exclude individuals who have no upper secondary school degree or no college degree, because an upper secondary school degree and a college degree is the regular educational pathway to be allowed to teach at school in Germany: The two conditions are fulfilled by 83.5% of teachers in the representative data set.

We define teachers as those teaching at primary, secondary, or vocational school. Higher education teachers (e.g., professors), teachers for adult education, and other teachers such as skiing instructors are not counted as teachers for the purposes of this study. To make sure that college teachers and professors are not counted as teachers, all not further specified teachers who have a doctoral degree (PhD degree) are excluded from the analyses; these are 1.21% of the not further specified teachers. Teachers with a PhD degree are included only if the school track at which they work is denoted (primary, secondary, or vocational).

The final sample comprises 18,381 observations of 3,365 different employees. Each individual is observed over several years – 5.5 years on average – with each year counting as

an additional observation (see also section 3.3 for details of the analysis). Of all observations, 2,920 relate to teachers (15.9%).

3.2. Measures

The first dependent variable *Risk aversion* captures the extent to which an individual is generally willing to take risks or tends to avoid risks (on an eleven-point Likert scale). This is an accepted measure of risk aversion (Dohmen and Falk 2010; Dohmen et al. 2005; see also Ayaita, Güral, and Yang 2018). An additional variable, *Occupation-related risk aversion*, captures the tendency to avoid risks specifically in the context of one's occupational career (also on an eleven-point Likert scale). The same measure is used in Pfeifer (2011) and Ayaita, Güral, and Yang (2018). Both variables are recoded so that higher values correspond to higher risk aversion.

The main explanatory variable *Teaching* is a binary variable and captures whether an individual is working in the teaching profession at school (value 1) or in another occupation (value 0). The respondents first specified their exact current occupation in open response format. The answers were then classified into different occupations, including teaching occupations, by the German Institute for Economic Research.

As control variables we include several factors that may reasonably be related both to risk aversion and to teaching profession. First, we consider work experience in full-time jobs (in years) and work experience in part-time jobs (in years). These variables capture the whole work experience of an individual up to a certain year and are not restricted to work experience that is accumulated during the time span of observation (2005–2016). Second, we consider biographical data: age, gender, marital status, German citizenship, and migration background. (See also Ayaita, Güral, and Yang 2018.)

We also include some other motives as control variables. On the one hand, prosocial motivation is considered as a counterpart to risk aversion. Prosocial motivation describes the willingness to support the well-being of others (Grant 2008) and captures an important aspect of intrinsic motivation as a driver for a career (e.g., Watt and Richardson 2007; Watt et al. 2012). Two types of prosocial motivation are included, which have been shown to be significantly related to public sector employment (Ayaita, Güral, and Yang 2018; Dur and Zoutenbier 2015): ‘civic virtue’ (Organ 1988: 12–13), the willingness to be socially and/or politically committed, and altruism, the desire to be there for others. On the other hand, financial motivation is included (the subjective importance of being able to afford things for oneself), because some individuals may choose the teaching career for financial reasons or, vice versa, choose a non-teaching career for financial reasons. Financial motivation has been shown to be slightly negatively related to public sector employment in comparison to private sector employment (Ayaita, Güral, and Yang 2018).

Furthermore, we consider the Big Five personality traits as control variables, which constitute a coherent measure of personality traits, consisting of the traits openness, conscientiousness, extraversion, agreeableness, and neuroticism (Goldberg 1993). Personality traits are relatively enduring patterns of thinking, feeling, and acting (Roberts 2009: 140). The Big Five personality traits have been shown to be relevant for public sector employment (Ayaita, Güral, and Yang 2018; Dohmen and Falk 2010) and for working in the teaching profession (Dohmen and Falk 2010). The SOEP includes short measures of the Big Five traits (Hahn, Gottschling, and Spinath 2012; Gerlitz and Schupp 2005). The shortness of the scales comes at the expense of moderate internal consistencies, but these scales have been shown to be highly correlated with more comprehensive scales (Denissen et al. 2017; Hahn, Gottschling, and Spinath 2012). Each trait is built by calculating the average of the three

items that measure this trait. Items that are negatively related to the construct are recoded beforehand.

The operationalization of each variable is shown in Table 1.³

[PLEASE INSERT TABLE 1 ABOUT HERE]

Different variants of the experience variables are used for the analysis of socialization versus selection effects (see also Ayaita, Güral, and Yang 2018). First, to test whether experience moderates the association between teaching and risk aversion, we aim at one coherent measure of work experience. For this purpose, we build a variable for overall work experience (*Experience*) that sums up the experience in full-time jobs and the experience in part-time jobs for each individual (again the whole work experience, not only experience accumulated between 2005 and 2016). Hereby, each year of full-time experience is counted fully, while each year of part-time experience is counted as half a year of work experience.

Second, for the socialization analysis with individual fixed effects, we aim at distinguishing the effects of teaching experience and the effects of experience in non-teaching occupations. For this reason, we build the variable *Teaching experience*, which counts, for

³ The original items are in German. All items and recommended English translations are accessible at (DIW Berlin/SOEP 2018). We deviate from the official translations, offered by the German Institute for Economic Research, in two cases (see also Ayaita, Güral, and Yang 2018). First, we slightly deviate from the official translation of occupation-related risk aversion (TNS Infratest Sozialforschung 2014: 68), because this translation does not explicitly state the career context as it is included in the original German item, which asks for the readiness to take risks in the occupational career (31). Second, we slightly deviate from the official translation of civic virtue (DIW Berlin/SOEP 2013: 42), because this translation does not fully capture the contribution to society as it is included in the original German item (5).

each individual, the years of experience in teaching occupations from 2005 to 2016 cumulatively. Analogously, the variable *Non-teaching experience* counts the years of experience in non-teaching occupations in this time interval. For example, if an individual is always working as a teacher, then the value of teaching experience increases by 1 unit in each year.⁴

3.3. Analyses

To test for differences between teaching and other occupations, we first regress risk aversion and occupation-related risk aversion (in two separate regressions) on teaching and the control variables in a multiple linear regression, using the pooled sample with data from 2005 to 2016. We do not regress teaching on risk aversion (compare, e.g., Ayaita, Güral, and Yang 2018), because the distribution of the variable *Teaching* is highly asymmetric: There are much fewer teachers than non-teachers. Due to the small baseline share of teachers, the marginal effects on teaching would be very small in magnitude, even if the relative increases in the probability of teaching are large. From our experience, this hinders the interpretation of the coefficients. Therefore, we use risk aversion as the dependent variable. From an econometric perspective, this does not make a difference, because no causal direction between risk aversion and teaching is proposed in this analysis. There are separate analyses for selection and socialization effects.

The first model has the following form:

⁴ These variables can only be used to analyze the effects of increasing experience in teaching and in non-teaching occupations. Absolute values of teaching experience or non-teaching experience are not available, because the complete employment history of individuals is not included in the data set.

*Risk aversion*_{it}

$$\begin{aligned}
&= b_0 + b_1 * Teaching_{it} + b_2 * Experience\ full\ time_{it} + b_3 \\
&\quad * Experience\ part\ time_{it} + b_4 * Age_{it} + b_5 * Female_{it} + b_6 * Married_{it} \\
&\quad + b_7 * German\ citizenship_{it} + b_8 * Migration\ background_{it} + b_9 \\
&\quad * Civic\ virtue_{it} + b_{10} * Altruism_{it} + b_{11} * Financial\ motivation_{it} + b_{12} \\
&\quad * Openness_{it} + b_{13} * Conscientiousness_{it} + b_{14} * Extraversion_{it} + b_{15} \\
&\quad * Agreeableness_{it} + b_{16} * Neuroticism_{it} + b_{17} * Region_{it} + b_{18} * Year_t \\
&\quad + e_{it}
\end{aligned}$$

where i is the individual, t is the year, b_0 is the intercept, the different b_k with $1 \leq k \leq 18$ capture the coefficients, and e_{it} is the error term. The vector $Region_{it}$ captures the state of residence (one dummy variable for each German state, with Schleswig-Holstein as the reference category), and the vector $Year_t$ contains year dummies (one dichotomous variable for each year from 2005 to 2015, with 2016 as the baseline year) (see also Ayaita, Güla, and Yang 2018). In this way, we account for the possibility that both the share of the teaching profession and values of risk aversion may vary across regions and/or across years, which could bias the findings if not controlling for region and year. By including both age and year, we also capture possible cohort effects, because the cohort (year of birth) follows directly from year and age.

All motives and personality traits are z-standardized for the regression analyses so that each has the mean 0 and the standard deviation 1. Heteroscedasticity-robust standard errors are used, because the assumption of homoscedasticity is rejected by a Breusch-Pagan/Cook-Weisberg test ($p < .01$). Standard errors are clustered at individual level to account for the fact that the same individual is observed over several years (Antonakis et al. 2010: 1098–1099).

While risk aversion is assessed in every year of the considered time span except 2005 and 2007, other motives and the personality traits are only assessed in specific and different years (occupation-related risk aversion in 2004, 2009, and 2014, civic virtue, altruism, and financial motivation in 2004, 2008, and 2012, and Big Five personality traits in 2005, 2009, and 2013). For this reason, we have to impute missing values within individuals across years. To account for the possibility that motives and personality traits are not stable over time – even in the short run – we improve the simple imputation method used previously (see Ayaita, Güral, and Yang 2018). In particular, in the years in which a particular personality variable is not assessed, we build the weighted average from the most current preceding year and the most current following year in which the variable is assessed. The weights for these two years are inversely proportional to the time distance (that is, the year that is x times more distant from the current year is given a weight that is x times smaller); the weights sum up to 1, so that the estimated values have the same scale as the original variables. For example, values on occupation-related risk aversion in 2010 are estimated as:

$$\begin{aligned} & \textit{Occupation related risk aversion}_{i,2010} \\ &= 0.8 * \textit{Occupation related risk aversion}_{i,2009} + 0.2 \\ & \quad * \textit{Occupation related risk aversion}_{i,2014} \end{aligned}$$

This method assumes a linear development of motives within individuals in the short term. If the most current preceding (following) measure is not available for an individual, then only the most current following (preceding) measure is used to estimate the value of the variable.⁵

⁵ To test whether our results depend on this imputation method, we perform a robustness check, which includes only those years in which the dependent variable (general risk aversion respectively occupation-related risk aversion) is assessed in the survey (section 4.5).

To test whether teachers tend to differ from other employees even within more homogeneous groups of occupations and positions, we use different variations of the regression model above: In a second pair of regressions (for risk aversion and occupation-related risk aversion), we restrict the sample to individuals in caring jobs (education, health, and social care), so that we compare teachers to others only within this job type. A total of 6,480 observations assigns themselves to caring jobs, of which 44.2% are teaching. Next, we alternatively restrict the sample to those who have a similar occupational status: We use a sample of civil servants (public servants with lifetime tenure), which has 4,634 observations (48.7% of them teaching), and compare teachers to other employees within this sample. Most teachers are civil servants in Germany (77.2% in our final sample).

Lastly, two different analyses are used to test whether differences between teachers and others are due to selection and/or socialization over the career. There are different methods to study selection into occupational environments by personality (see, e.g., Ayaita, Güral, and Yang 2018). Because we observe only a small number of teachers before they enter the profession and because only few employees switch between teaching and other professions, we use the following method to study selection and socialization effects. We include the interaction of experience and teaching in the first model outlined above, separately for general risk aversion and occupation-related risk aversion. Here we use the measure of overall work experience, combining experience in full-time jobs and experience in part-time jobs. Note that work experience captures the whole work experience of an individual until a certain year and is not restricted to work experience during the time frame of observation (2005–2016). The coefficient for the variable *Experience x Teaching* estimates how the association between teaching and risk aversion changes with more experience, holding the control variables constant. The coefficient for *Teaching* then only estimates how teaching relates to risk aversion at zero years of experience, that is, when entering the labor market the

first time. The approach is comparable to Buurman et al. 2012: 284–285) and Dur and Zoutenbier 2015: 360–361).

We use a second method to estimate socialization effects (see also Ayaita, Güral, and Yang 2018). By holding each individual constant with a fixed effect, we can focus on trends over the career and avoid the problem that more experienced individuals may differ from less experienced individuals in unobserved characteristics. Moreover, in the career trend analysis we can clearly distinguish between (increasing) experience in teaching occupations and (increasing) experience in non-teaching occupations, using newly generated variables based on the time span of observation, 2005–2016. The fixed effects analysis calculates how risk aversion of one and the same individual changes with each additional year of teaching respectively non-teaching experience. We use the following model (see Wooldridge 2010: 300):

$$\begin{aligned} \text{Risk aversion}_{it} &= \beta_0 + \beta_1 * \text{Teaching experience}_{it} + \beta_2 * \text{Non teaching experience}_{it} \\ &+ \alpha_i + \varepsilon_{it} \end{aligned}$$

where α_i is the individual fixed effect and ε_{it} is the error term. In contrast to the other models, this model does not include year dummies, because year is highly correlated with the main explanatory variables of this model (experience) when focusing on one and the same individual.

This model is used for general risk aversion and occupation-related risk aversion separately. Both variables are z-standardized. Heteroscedasticity-robust standard errors are used, as the assumption of homoscedasticity is rejected by a Breusch-Pagan/Cook-Weisberg test ($p < .01$).

4. Results

Summary statistics of all variables are shown in Table 2. Overall, teachers score higher in risk aversion and occupation-related risk aversion than other employees (with comparable education level, that is, only considering those with an upper secondary school degree and college degree). Furthermore, teachers tend to score slightly higher in the measures of prosocial motivation (civic virtue and altruism), and these differences are significant according to *t*-tests ($p < .01$ in both cases). Teachers also tend to be slightly more open, less conscientious, more extraverted, more agreeable, and more neurotic (emotionally instable) ($p < .01$ in all cases). The directions of these differences between teachers and other employees are in line with the differences between public and private sector employees (Ayaita, Güral, and Yang 2018). But the differences in risk aversion (general and occupation-related) are much more pronounced between teachers and other employees than between public and private sector employees.

[PLEASE INSERT TABLE 2 ABOUT HERE]

Correlations between the motives and personality traits considered in the present study are shown in Table 3. (General) risk aversion is moderately correlated with occupation-related risk aversion ($r = .45$). The risk aversion measures show small correlations with the control variables civic virtue (negative correlations) and altruism (positive correlations) (see also Ayaita, Güral, and Yang 2018). The relation between the risk aversion measures and the Big Five personality traits are mostly small ($|r| \leq .20$), except for a moderate positive correlation between general risk aversion and neuroticism ($r = .23$).

[PLEASE INSERT TABLE 3 ABOUT HERE]

4.1. Teaching and risk aversion in the pooled sample

The results of the first analysis are presented in Figure 1, where teachers are compared to all other employees with similar education level (upper secondary school degree and college degree) in the full sample from 2005 to 2016, using all control variables. Teaching relates positively to (general) risk aversion and, significantly stronger, to risk aversion with respect to occupational career. Compared to non-teaching, teaching is associated with a 0.16 standard deviations higher value in risk aversion (which are 0.32 points on the eleven-point Likert scale) and with a 0.38 standard deviations higher value in occupation-related risk aversion (0.83 points on the eleven-point Likert scale), on average. Each of these two coefficients is significant with $p < .01$.

The coefficients for the control variables are shown in Table A1 in the Appendix.

[PLEASE INSERT FIGURE 1 ABOUT HERE]

4.2. Teaching and risk aversion within more homogeneous samples

In the next step, teachers are compared to other employees within narrower groups of occupations. The results are shown in Figure 2. When the sample is restricted to caring jobs (comprising education, health, and social care) and teachers are compared to other employees within this job type (striped bars), using all control variables, then the positive association between teaching profession and (general) risk aversion remains significant ($p < .01$) and is estimated to 0.15 standard deviations. The relationship between teaching and occupation-related risk aversion remains significant as well ($p < .01$) and is estimated to 0.33 standard deviations. These estimated effect sizes are both similar to the results in the full sample.

When the sample is restricted to civil servants (public servants with lifetime tenure) and teaching civil servants are compared to other civil servants (dotted bars), including all control variables, then the relationship between teaching and (general) risk aversion is significant at a

lower level ($p < .05$) and the point estimate is 0.12 standard deviations. Occupation-related risk aversion is still considerably and significantly higher among teachers compared to other occupations, on average, even within the group of civil servants (0.38 standard deviations, $p < .01$).

The coefficients for the control variables are shown in Table A2 in the Appendix.

[PLEASE INSERT FIGURE 2 ABOUT HERE]

4.3. Selection and socialization

To find out whether differences between teachers and other employees are due to (self-) selection and/or due to socialization, in the next step we include the interaction of experience and teaching in the main regression, comparing teachers to all other employees with similar education level (upper secondary school and college degree). We thereby test whether and how the effect of teaching changes with experience and whether teaching remains significantly related to risk aversion even with no year of work experience. The measure of overall work experience is used, combining full-time and part-time work experience. The results are shown in Table 4.

Model (1) explains (general) risk aversion. As the coefficient for *Teaching* shows, teaching relates positively to (general) risk aversion when work experience is equal to zero, holding the control variables constant (0.16 standard deviations, $p < .05$). There is no interaction effect of work experience and teaching on (general) risk aversion, meaning that the relationship between teaching and risk aversion does apparently not depend on experience. These results show that, in line with our theoretical expectation, selection explains teachers' higher average (general) risk aversion. In contrast, we do not find evidence on socialization effects for teachers' higher (general) risk aversion.

For occupation-related risk aversion (model (2)), we also find a selection effect, as teaching relates positively to occupation-related risk aversion with no year of work experience, holding the control variables constant (0.25 standard deviations, $p < .01$). In addition, as the interaction of experience and teaching shows, higher work experience is apparently associated with a larger effect of teaching on occupation-related risk aversion: With each additional year of work experience, the relationship between teaching and occupation-related risk aversion increases by 0.007 standard deviations, on average (marginally significant with $p < .10$). These results indicate that teachers' higher occupation-related risk aversion is explained by selection and is apparently reinforced by socialization.^{6,7}

[PLEASE INSERT TABLE 4 ABOUT HERE]

To test socialization effects more robustly, we finally assess changes in risk aversion within each individual for increasing teaching experience and for increasing experience in any non-teaching occupations, where the individual is held constant by including an individual fixed effect. The results are shown in Table 5.

⁶ A multicollinearity problem might occur because age and experience are related to each other and are included together: Because a part of the experience effect might appear in the age coefficient, the analysis in Table 4 could potentially underestimate the magnitude of experience effects. We therefore check whether the results in Table 4 change if we exclude age. The pattern of results does not change.

⁷ In order to not overload the analysis, in Table 4 we do not vary the reference group. If the sample is restricted to more specific groups (only employees in caring jobs or only civil servants), then the point estimates are equivalent to Table 4 but partly not significant, which may be due to the lower statistical power (smaller sample sizes). The results for different samples are shown in Table A3 in the Appendix.

General risk aversion increases by 0.022 standard deviations with each additional year of teaching experience, while it increases by 0.012 standard deviations with each additional year of non-teaching work experience, on average. Risk aversion with respect to occupational career increases by 0.021 standard deviations with each additional year of teaching experience and by 0.015 standard deviations with each additional year of non-teaching work experience. This means that, while employees in general tend to become more risk-averse with increasing work experience, the increase appears to be more pronounced in the teaching profession than in other occupations. These results suggest that socialization processes may indeed contribute to teachers' higher average risk aversion compared to other occupations. However, we note that in both models (general and occupation-related risk aversion) the difference between the effect of teaching experience and the effect of non-teaching experience is not significant.^{8,9}

[PLEASE INSERT TABLE 5 ABOUT HERE]

⁸ In the fixed effects analysis presented in Table 5, no control variables are used because each individual is already held constant. We nevertheless check whether the results are robust to including all control variables, accounting for the possibility that changes in some characteristics occur that affect both the main explanatory variables (experience) and risk aversion. Only age is not included, because changes in age are highly collinear with changes in experience; for the same reason, year dummies are not included. The pattern of results does not change.

⁹ As in Table 4, all employees with an upper secondary school and college degree are included in Table 5. The main results of Table 5 are equivalent if the sample is additionally restricted to employees in caring jobs or to civil servants (see Table A4 in the Appendix).

4.4. Robustness check

To test whether the results depend on the imputation method used in the analyses (see section 3.3), we perform a robustness check, where no risk aversion values are imputed and the analysis is restricted to those years in which the dependent variable (general risk aversion respectively occupation-related risk aversion) is assessed in the survey. In the time of the analysis (2005–2016), general risk aversion is assessed in each year except 2005 and 2007; when these two years are dropped, the final sample is reduced to exactly 14,881 observations, of which 15.5% are teaching. Between 2005 and 2016, occupation-related risk aversion is only assessed in 2009 and 2014; restricting the analysis to these two years reduces the final sample to 1,922 observations, of which 15.1% are teaching. The results of the robustness check are shown in the Appendix and demonstrate the robustness of our main findings (see Tables A5–A8).

In the pooled sample, comparing teachers to all other employees with respect to general and occupation-related risk aversion, the results are equivalent to our baseline results (see Table A5 in the Appendix). Within the more homogeneous groups (caring employees and civil servants), the results are equivalent to the baseline results as well (see Table A6).

In the analysis of selection and socialization, the evidence on selection effects is equivalent to the baseline findings, while the socialization effect for occupation-related risk aversion (interaction of experience and teaching) is not significant anymore, although the estimated coefficient is similar to the baseline results. This change may be due to the reduction in statistical power but also indicates that the evidence on selection is more robust than the indication of a socialization effect. (See Table A7.)

The fixed effects socialization analysis yields no significant results anymore. However, the point estimates suggest that the relation between the effects of increasing teaching experience

and increasing non-teaching experience is equivalent to the baseline findings: The estimated effects of teaching experience on general and occupation-related risk aversion are larger than the estimated effects of non-teaching experience. As in the baseline analysis, the differences between teaching and non-teaching experience are not significant. (See Table A8.)

5. Conclusion

Based on twelve waves of a representative data set and final sample of 18,381 observations in Germany, the present study replicates an earlier finding that being a teacher at schools relates positively to risk aversion in comparison to observationally equivalent employees outside the teaching profession (Dohmen and Falk 2010). We show that this relationship is stronger for a specific form of risk aversion, namely, risk aversion with respect to occupational career. Teachers score significantly higher in risk aversion even compared to other civil servants, especially in occupation-related risk aversion. One reason for this phenomenon might be that teaching is perceived as a rather familiar occupation, which makes it attractive for individuals with a low readiness to take risks in their career. We find evidence that individuals with higher scores in general risk aversion (see also Bowen et al. 2015) as well as those with higher occupation-related risk aversion are attracted to the teaching profession from career outset. In addition, we find tentative evidence that risk aversion, in particular with respect to occupational career, tends to increase over teachers' careers more strongly than for non-teaching employees, on average.

The evidence on teachers' relatively high risk aversion may inform discussions about teacher payment reforms. Because teachers on average have the motive to avoid risks, especially in their occupational career, any flexible payment is likely to reduce their satisfaction and lead to resistance (Bowen et al. 2015; Dohmen and Falk 2010). Because the currently rather fixed payment schemes apparently attract risk-averse individuals to the teaching profession, changes in payment schemes toward performance pay would probably

lead to a change in the composition of the teacher workforce due to a changing self-selection process (Dohmen and Falk 2010).

One might even argue that teachers' higher risk aversion is one plausible explanation for many teachers' resistance to reform in general (Terhart 2013). It is unclear, however, whether more or less risk-averse individuals are better suited for the teaching profession and student outcomes (Dohmen and Falk 2010). Risk aversion has been found to be negatively related to the adoption of new, innovative workplace practices among farmers (Abadi Ghadim, Pannell, and Burton 2005), but this economic decision is not necessarily comparable to the everyday work of a teacher. Risk aversion has also been determined as a negative predictor of the use of technology in teaching (Howard 2013), but it is not clear whether and how these decisions relate to the ability to use technology in order to enhance students' learning processes. Therefore, it is an open question whether teachers' higher risk aversion predicts resistance toward innovations that would facilitate effective teaching practice. Risk aversion might prevent teachers from implementing inefficient reforms and is presumably important for the avoidance of risks in school excursions and the like.

A main limitation of the present study is the reliance on observational data. While this is highly beneficial for the representativeness, sample size, and comparison groups of the analyses, a disadvantage is that socialization effects can only be approximated in the absence of an experiment or quasi-experiment (natural experiment). Future research might use longitudinal data with a cohort design or exogenous variation in the share of teachers to study socialization effects.

We are additionally restricted in the analysis of selection effects because the sample only includes employees and not university students in teaching versus non-teaching programs or high school students before starting a teacher education program versus another program.

These early points in time are very beneficial for the study of selection effects (Roloff Henoch et al. 2015).

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Table 1: Operationalization of variables.

Variable	Item	Scale
<u>Dependent variables</u>		
Risk aversion	<ul style="list-style-type: none"> 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)
Occupation-related risk aversion	<ul style="list-style-type: none"> How would you rate your willingness to take risks in the following areas? – in your occupational career? 	Ordinal (0–10)
<u>Main explanatory variable</u>		
Teaching	<ul style="list-style-type: none"> What is your current position/occupation? Please state the exact title in German. 	Dummy
<u>Control variables</u>		
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
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
Civic virtue	<ul style="list-style-type: none"> Different things are important to different people. How important are the following things to you? – Being politically and/or socially committed 	Ordinal (1–4)
Altruism	<ul style="list-style-type: none"> How important are the following things to you? – Being there for others 	Ordinal (1–4)
Financial motivation	<ul style="list-style-type: none"> How important are the following things to you? – Being able to afford things for myself 	Ordinal (1–7)
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. 	Ordinal (1–7)
Extraversion	<ul style="list-style-type: none"> I am communicative, talkative. I am outgoing, sociable. I am reserved. 	Ordinal (1–7)
Agreeableness	<ul style="list-style-type: none"> I am forgiving. I am reserved. I am considerate and kind to others. 	Ordinal (1–7)
Neuroticism	<ul style="list-style-type: none"> I am a worrier. I am nervous. I am relaxed, able to deal with stress. 	Ordinal (1–7)

Table 2: Descriptive statistics: Means and standard deviations.

Variables	Teachers ($n_1 = 2,920$ observations)		Non-teaching employees ($n_2 = 15,461$ observations)		p -value of mean difference (two-sided t -tests)
	Mean	Std. dev.	Mean	Std. dev.	
<u>Dependent variables</u>					
Risk aversion	5.691	1.999	5.198	2.034	.000
Occupation-related risk aversion	6.824	2.250	5.699	2.161	.000
<u>Control variables</u>					
Experience (full-time)	15.968	11.739	15.971	11.020	.991
Experience (part-time)	5.429	7.221	2.635	4.482	.000
Age	48.376	10.615	44.760	10.366	.000
Female	0.687	0.464	0.412	0.492	.000
Married	0.703	0.457	0.650	0.477	.000
German citizenship	0.993	0.085	0.988	0.110	.019
Migration background	0.055	0.228	0.088	0.283	.000
Civic virtue	2.474	0.621	2.335	0.659	.000
Altruism	3.334	0.489	3.208	0.508	.000
Financial motivation	2.936	0.501	2.952	0.543	.121
Openness	4.871	1.077	4.692	1.072	.000
Conscientiousness	5.703	0.866	5.791	0.808	.000
Extraversion	4.961	1.102	4.732	1.131	.000
Agreeableness	5.480	0.800	5.307	0.876	.000
Neuroticism	3.774	1.172	3.551	1.130	.000

Table 3: Correlations between motives and personality traits.

Variables	1	2	3	4	5	6	7	8	9	10
1 Risk aversion	1.00									
2 Occ.-related risk aversion	.45**	1.00								
3 Civic virtue	-.09**	-.05**	1.00							
4 Altruism	.02*	.02**	.21**	1.00						
5 Financial motivation	.01	-.02*	-.12**	.10**	1.00					
6 Openness	-.20**	-.14**	.19**	.14**	-.03**	1.00				
7 Conscient.	-.02**	-.01	.03**	.08**	.08**	.12**	1.00			
8 Extraversion	-.20**	-.15**	.13**	.21**	.09**	.36**	.14**	1.00		
9 Agreeableness	.05**	.11**	.09**	.21**	-.05**	.14**	.21**	.08**	1.00	
10 Neuroticism	.23**	.14**	-.05**	.01	.04**	-.03**	-.14**	-.15**	-.15**	1.00

Notes: SOEP sample of employees in Germany with upper secondary school and college degree (2005–2016), $N = 18,381$ observations.

** $p < .01$. * $p < .05$. + $p < .10$.

Table 4: Selection and socialization.

Variables	(1) Risk aversion	(2) Occupation-related risk aversion
Teaching	0.163* (0.073)	0.253** (0.086)
Experience	-0.004 (0.003)	-0.007+ (0.004)
Experience x Teaching	-0.000 (0.003)	0.007+ (0.004)
Age	0.004 (0.003)	0.020** (0.004)
Female	0.295** (0.031)	0.200** (0.038)
Married	0.080** (0.029)	0.076* (0.035)
German citizenship	0.183 (0.137)	0.029 (0.167)
Migration background	-0.115* (0.056)	-0.095 (0.063)
Civic virtue	-0.051** (0.014)	-0.061** (0.016)
Altruism	0.023+ (0.014)	0.029+ (0.016)
Financial motivation	0.010 (0.013)	0.008 (0.015)
Openness	-0.158** (0.014)	-0.125** (0.017)
Conscientiousness	0.022 (0.014)	-0.009 (0.017)
Extraversion	-0.154** (0.015)	-0.112** (0.018)
Agreeableness	0.088** (0.014)	0.132** (0.017)
Neuroticism	0.182** (0.015)	0.105** (0.017)
Constant	-0.315+ (0.187)	-0.576* (0.227)
Observations	18,381	18,381
R-squared	0.174	0.150

Notes: Multiple linear regressions. Dependent variable: general risk aversion (model (1)) respectively occupation-related risk aversion (model (2)). The main explanatory variable *Teaching* is 1 if an individual is teaching and 0 for all other professions. All motives and personality traits are z-standardized. Each year of part-time work experience is counted as half a year of experience. Both models include region and year dummies. Robust standard errors clustered at the individual level in

parentheses.

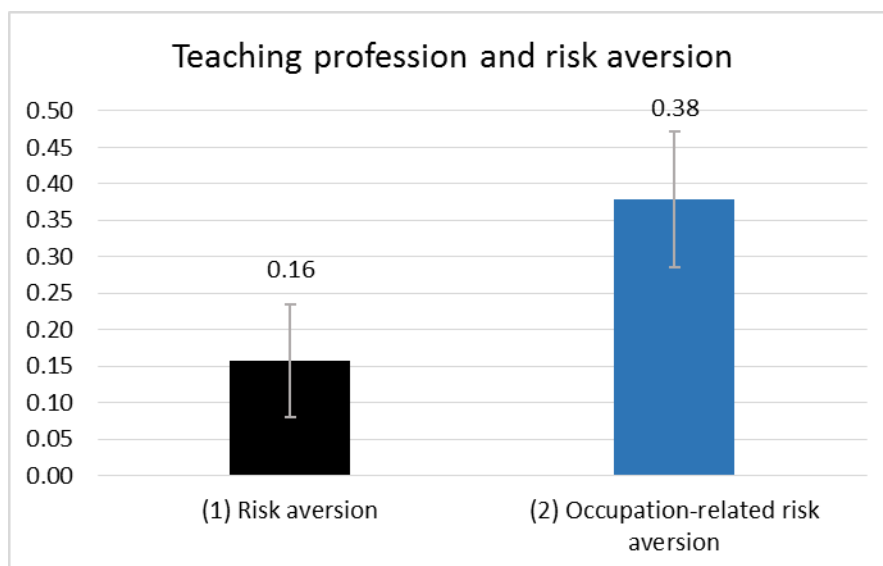
$**p < .01$. $*p < .05$. $+p < .10$.

Table 5: Fixed effects socialization analysis: Changes in risk aversion within individuals.

Variables	(1) Risk aversion	(2) Occupation-related risk aversion
<u>Teaching experience</u>	0.022** (0.007)	0.021* (0.008)
<u>Non-teaching experience</u>	0.012** (0.003)	0.015** (0.003)
Constant	-0.056** (0.012)	-0.067** (0.014)
Observations	18,381	18,381
R-squared	0.003	0.011

Notes: Multiple linear regressions with individual fixed effects. Dependent variable: z-standardized general risk aversion (model (1)) respectively z-standardized occupation-related risk aversion (model (2)). The explanatory variable *Teaching experience* captures the years of experience in teaching occupations cumulatively between 2005 and 2016, and the explanatory variable *Non-teaching experience* captures the years of experience in any other occupations cumulatively between 2005 and 2016. Robust standard errors in parentheses.

** $p < .01$. * $p < .05$. + $p < .10$.

**Figure 1.**

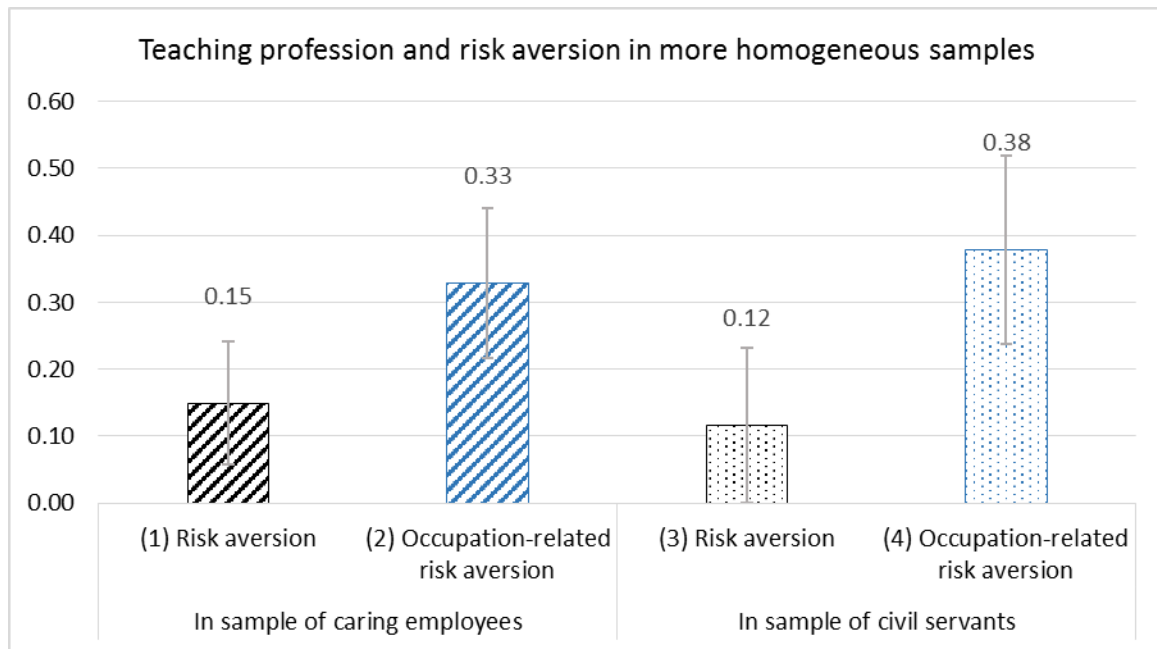
**Figure 2.**

Figure 1. Teaching profession and risk aversion.

Notes: Coefficients from multiple linear regressions with 95% confidence intervals. Dependent variable: z-standardized general risk aversion (model (1)) respectively z-standardized occupation-related risk aversion (model (2)). Main explanatory variable: *Teaching* (1 = yes, 0 = no). All control variables included: experience (full-time), experience (part-time), age, female, married, German citizenship, migration background, civic virtue, altruism, financial motivation, openness, conscientiousness, extraversion, agreeableness, and neuroticism. Region and year dummies included as well. SOEP sample of employees in Germany with upper secondary school and college degree (2005–2016), $N = 18,381$ observations. Robust standard errors clustered at the individual level.

Figure 2. Teaching profession and risk aversion in more homogeneous samples.

Notes: Coefficients from multiple linear regressions with 95% confidence intervals. Models (1) and (2) are restricted to employees in caring jobs (comprising education, health, and social care), $n_I = 6,480$ observations. Models (3) and (4) are restricted to civil servants (public servants with lifetime tenure), $n_{II} = 4,634$ observations. Dependent variable: z-standardized general risk aversion (models (1) and (3)) respectively z-standardized occupation-related risk aversion (models (2) and (4)). Main explanatory variable: *Teaching* (1 = yes, 0 = no). All control variables, region and year dummies included. Robust standard errors clustered at the individual level.

Appendix

Table A1: Teaching profession and risk aversion.

Variables	(1) Risk aversion	(2) Occupation-related risk aversion
Teaching	0.157** (0.040)	0.379** (0.047)
Experience (full-time)	-0.004 (0.004)	-0.004 (0.004)
Experience (part-time)	-0.001 (0.005)	0.002 (0.006)
Age	0.004 (0.004)	0.017** (0.004)
Female	0.292** (0.032)	0.190** (0.040)
Married	0.080** (0.029)	0.073* (0.035)
German citizenship	0.181 (0.137)	0.027 (0.168)
Migration background	-0.115* (0.056)	-0.094 (0.063)
Civic virtue	-0.052** (0.014)	-0.062** (0.016)
Altruism	0.023+ (0.014)	0.029+ (0.016)
Financial motivation	0.010 (0.013)	0.008 (0.015)
Openness	-0.158** (0.014)	-0.124** (0.017)
Conscientiousness	0.022 (0.014)	-0.008 (0.017)
Extraversion	-0.154** (0.015)	-0.113** (0.018)
Agreeableness	0.088** (0.014)	0.130** (0.017)
Neuroticism	0.182** (0.015)	0.105** (0.017)
Constant	-0.297 (0.191)	-0.541* (0.235)
Observations	18,381	18,381
R-squared	0.174	0.150

Notes: All motives and personality traits are z-standardized. Robust standard errors clustered at the individual level in parentheses.

** $p < .01$. * $p < .05$. + $p < .10$.

Table A2: Teaching profession and risk aversion in more homogeneous samples.

Variables	Caring jobs (education, health, social care)		Civil servants (public servants with tenured position)	
	(1) Risk aversion	(2) Occupation- related risk aversion	(3) Risk aversion	(4) Occupation- related risk aversion
Teaching	0.149** (0.047)	0.328** (0.057)	0.116* (0.059)	0.379** (0.072)
Experience (full-time)	-0.004 (0.005)	0.003 (0.006)	0.007 (0.008)	0.009 (0.009)
Experience (part-time)	0.004 (0.007)	0.009 (0.008)	0.014 (0.009)	0.013 (0.011)
Age	0.001 (0.005)	0.013* (0.006)	-0.008 (0.007)	0.003 (0.009)
Female	0.241** (0.054)	0.152* (0.068)	0.280** (0.065)	0.228** (0.082)
Married	0.092+ (0.049)	0.110+ (0.061)	0.167** (0.060)	0.174* (0.082)
German citizenship	0.079 (0.218)	0.126 (0.270)	-0.032 (0.230)	0.310 (0.279)
Migration background	-0.295** (0.098)	-0.161 (0.112)	-0.283+ (0.147)	-0.337+ (0.192)
Civic virtue	-0.049* (0.024)	-0.084** (0.028)	-0.070* (0.029)	-0.018 (0.034)
Altruism	0.013 (0.023)	0.042 (0.027)	-0.033 (0.030)	0.009 (0.033)
Financial motivation	0.035 (0.022)	0.043 (0.027)	0.052+ (0.027)	0.054+ (0.031)
Openness	-0.162** (0.024)	-0.149** (0.029)	-0.119** (0.028)	-0.094** (0.032)
Conscientiousness	0.015 (0.024)	-0.024 (0.028)	0.027 (0.027)	-0.034 (0.032)
Extraversion	-0.149** (0.026)	-0.074* (0.033)	-0.143** (0.030)	-0.158** (0.038)
Agreeableness	0.048* (0.022)	0.130** (0.029)	0.089** (0.028)	0.112** (0.036)
Neuroticism	0.169** (0.024)	0.114** (0.029)	0.166** (0.029)	0.082* (0.033)
Constant	0.056 (0.299)	-0.586 (0.373)	0.281 (0.338)	-0.377 (0.419)
Observations	6,480	6,480	4,634	4,634
R-squared	0.181	0.169	0.202	0.174

Notes: All motives and personality traits are z-standardized. Robust standard errors clustered at the individual level in parentheses.

** $p < .01$. * $p < .05$. + $p < .10$.

Table A3: Selection and socialization in different samples.

Variables	All employees		Caring jobs (education, health, social care)		Civil servants (public servants with tenured position)	
	(1) Risk aversion	(2) Occupation- related risk aversion	(3) Risk aversion	(4) Occupation- related risk aversion	(5) Risk aversion	(6) Occupation- related risk aversion
Teaching	0.163* (0.073)	0.253** (0.086)	0.117 (0.081)	0.210* (0.099)	0.197+ (0.110)	0.204 (0.135)
Experience	-0.004 (0.003)	-0.007+ (0.004)	-0.008 (0.005)	-0.005 (0.006)	0.002 (0.007)	-0.002 (0.008)
Experience x Teaching	-0.000 (0.003)	0.007+ (0.004)	0.002 (0.004)	0.007 (0.005)	-0.004 (0.005)	0.009 (0.006)
Age	0.004 (0.003)	0.020** (0.004)	0.005 (0.005)	0.018** (0.005)	-0.001 (0.006)	0.009 (0.007)
Female	0.295** (0.031)	0.200** (0.038)	0.255** (0.053)	0.170** (0.065)	0.313** (0.064)	0.251** (0.079)
Married	0.080** (0.029)	0.076* (0.035)	0.093+ (0.049)	0.113+ (0.061)	0.169** (0.061)	0.177* (0.082)
German citizenship	0.183 (0.137)	0.029 (0.167)	0.080 (0.218)	0.124 (0.266)	-0.008 (0.237)	0.316 (0.284)
Migration background	-0.115* (0.056)	-0.095 (0.063)	-0.294** (0.099)	-0.161 (0.112)	-0.282+ (0.150)	-0.332+ (0.189)
Civic virtue	-0.051** (0.014)	-0.061** (0.016)	-0.047* (0.024)	-0.082** (0.028)	-0.071* (0.029)	-0.017 (0.034)
Altruism	0.023+ (0.014)	0.029+ (0.016)	0.012 (0.023)	0.040 (0.027)	-0.035 (0.030)	0.009 (0.033)
Financial motivation	0.010 (0.013)	0.008 (0.015)	0.036 (0.022)	0.043 (0.026)	0.054* (0.027)	0.055+ (0.031)
Openness	-0.158** (0.014)	-0.125** (0.017)	-0.163** (0.024)	-0.151** (0.029)	-0.119** (0.028)	-0.093** (0.032)
Conscientiousness	0.022 (0.014)	-0.009 (0.017)	0.015 (0.024)	-0.024 (0.028)	0.028 (0.027)	-0.036 (0.032)
Extraversion	-0.154** (0.015)	-0.112** (0.018)	-0.146** (0.026)	-0.070* (0.033)	-0.141** (0.031)	-0.154** (0.037)
Agreeableness	0.088** (0.014)	0.132** (0.017)	0.050* (0.022)	0.132** (0.029)	0.088** (0.029)	0.114** (0.036)
Neuroticism	0.182** (0.015)	0.105** (0.017)	0.170** (0.024)	0.116** (0.029)	0.165** (0.029)	0.084* (0.033)
Constant	-0.315+ (0.187)	-0.576* (0.227)	-0.028 (0.306)	-0.657+ (0.360)	0.036 (0.332)	-0.445 (0.407)
Observations	18,381	18,381	6,480	6,480	4,634	4,634
R-squared	0.174	0.150	0.180	0.169	0.201	0.175

** $p < .01$. * $p < .05$. + $p < .10$.

Table A4: Fixed effects socialization analysis in different samples.

Variables	All employees		Caring jobs (education, health, social care)		Civil servants (public servants with tenured position)	
	(1) Risk aversion	(2) Occupation- related risk aversion	(3) Risk aversion	(4) Occupation- related risk aversion	(5) Risk aversion	(6) Occupation- related risk aversion
<u>Teaching experience</u>	0.022** (0.007)	0.021* (0.008)	0.023** (0.007)	0.020* (0.008)	0.024** (0.008)	0.025** (0.009)
<u>Non-teaching experience</u>	0.012** (0.003)	0.015** (0.003)	0.012+ (0.007)	0.019** (0.007)	0.015+ (0.008)	0.023* (0.009)
Constant	-0.056** (0.012)	-0.067** (0.014)	0.023 (0.020)	0.093** (0.023)	0.067** (0.024)	0.161** (0.029)
Observations	18,381	18,381	6,480	6,480	4,634	4,634
R-squared	0.003	0.011	0.005	0.017	0.006	0.024

** $p < .01$. * $p < .05$. + $p < .10$.

Table A5: Robustness check: Teaching profession and risk aversion, only including the years in which the respective measure of risk aversion is available in the survey.

Variables	(1) Risk aversion	(2) Occupation-related risk aversion
Teaching	0.161** (0.041)	0.374** (0.068)
Experience (full-time)	-0.005 (0.004)	-0.007 (0.007)
Experience (part-time)	-0.001 (0.005)	0.000 (0.009)
Age	0.005 (0.004)	0.022** (0.007)
Female	0.297** (0.033)	0.237** (0.053)
Married	0.080** (0.030)	0.073 (0.052)
German citizenship	0.222 (0.156)	0.158 (0.275)
Migration background	-0.131* (0.056)	-0.118 (0.084)
Civic virtue	-0.051** (0.014)	-0.054* (0.025)
Altruism	0.024+ (0.014)	0.034 (0.027)
Financial motivation	0.008 (0.014)	0.006 (0.025)
Openness	-0.164** (0.015)	-0.137** (0.024)
Conscientiousness	0.026+ (0.015)	0.021 (0.023)
Extraversion	-0.150** (0.015)	-0.108** (0.025)
Agreeableness	0.086** (0.014)	0.106** (0.023)
Neuroticism	0.188** (0.015)	0.092** (0.024)
Constant	-0.356+ (0.205)	-0.947* (0.375)
Observations	14,881	1,922
R-squared	0.172	0.148

** $p < .01$. * $p < .05$. + $p < .10$.

Table A6: Robustness check: Teaching profession and risk aversion in more homogeneous samples, only including the years in which the respective measure of risk aversion is available in the survey.

Variables	Caring jobs (education, health, social care)		Civil servants (public servants with tenured position)	
	(1) Risk aversion	(2) Occupation- related risk aversion	(3) Risk aversion	(4) Occupation- related risk aversion
Teaching	0.156** (0.048)	0.322** (0.086)	0.130* (0.062)	0.361** (0.110)
Experience (full-time)	-0.005 (0.005)	-0.003 (0.010)	0.008 (0.008)	0.017 (0.014)
Experience (part-time)	0.003 (0.007)	-0.003 (0.012)	0.015 (0.010)	0.029+ (0.017)
Age	0.002 (0.005)	0.021* (0.010)	-0.008 (0.008)	-0.009 (0.013)
Female	0.240** (0.056)	0.252** (0.094)	0.274** (0.069)	0.276* (0.118)
Married	0.091+ (0.050)	0.079 (0.087)	0.167** (0.064)	0.149 (0.121)
German citizenship	0.150 (0.246)	0.249 (0.473)	-0.156 (0.248)	0.208 (0.321)
Migration background	-0.298** (0.096)	-0.283+ (0.167)	-0.286+ (0.151)	-0.662* (0.256)
Civic virtue	-0.047+ (0.025)	-0.043 (0.045)	-0.064* (0.030)	-0.030 (0.053)
Altruism	0.012 (0.024)	0.018 (0.046)	-0.031 (0.032)	0.002 (0.057)
Financial motivation	0.039+ (0.023)	0.086+ (0.045)	0.059* (0.029)	0.065 (0.056)
Openness	-0.159** (0.025)	-0.155** (0.043)	-0.117** (0.030)	-0.105* (0.048)
Conscientiousness	0.020 (0.025)	0.024 (0.040)	0.034 (0.029)	0.030 (0.048)
Extraversion	-0.146** (0.027)	-0.058 (0.045)	-0.139** (0.032)	-0.159** (0.053)
Agreeableness	0.046+ (0.024)	0.096* (0.041)	0.086** (0.031)	0.096+ (0.050)
Neuroticism	0.172** (0.025)	0.118** (0.040)	0.164** (0.031)	0.056 (0.049)
Constant	-0.070 (0.323)	-0.970 (0.629)	0.346 (0.359)	0.143 (0.551)
Observations	5,222	672	3,677	466
R-squared	0.177	0.180	0.190	0.183

** $p < .01$. * $p < .05$. + $p < .10$.

Table A7: Robustness check: Selection and socialization, only including the years in which the respective measure of risk aversion is available in the survey.

Variables	(1) Risk aversion	(2) Occupation-related risk aversion
Teaching	0.148* (0.075)	0.292* (0.122)
Experience	-0.005 (0.003)	-0.010+ (0.006)
Experience x Teaching	0.001 (0.003)	0.005 (0.006)
Age	0.005 (0.003)	0.024** (0.006)
Female	0.300** (0.033)	0.245** (0.052)
Married	0.080** (0.030)	0.075 (0.052)
German citizenship	0.222 (0.155)	0.159 (0.274)
Migration background	-0.130* (0.056)	-0.119 (0.084)
Civic virtue	-0.051** (0.014)	-0.054* (0.025)
Altruism	0.024+ (0.014)	0.034 (0.027)
Financial motivation	0.008 (0.014)	0.006 (0.025)
Openness	-0.164** (0.015)	-0.137** (0.024)
Conscientiousness	0.026+ (0.015)	0.020 (0.023)
Extraversion	-0.150** (0.015)	-0.107** (0.025)
Agreeableness	0.086** (0.014)	0.107** (0.023)
Neuroticism	0.188** (0.015)	0.092** (0.024)
Constant	-0.367+ (0.201)	-0.982** (0.365)
Observations	14,881	1,922
R-squared	0.172	0.148

** $p < .01$. * $p < .05$. + $p < .10$.

Table A8: Robustness check: Fixed effects socialization analysis, only including the years in which the respective measure of risk aversion is available in the survey.

Variables	(1) Risk aversion	(2) Occupation-related risk aversion
<u>Teaching experience</u>	0.012 (0.008)	0.029 (0.057)
<u>Non-teaching experience</u>	-0.001 (0.003)	-0.009 (0.030)
Constant	0.025 (0.015)	0.065 (0.110)
Observations	14,881	1,922
R-squared	0.000	0.003

** $p < .01$. * $p < .05$. + $p < .10$.