

# Who Earns More and Why? A Multiple Mediation Model from Personality to Salary

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## Abstract

**Purpose** The purpose of this study was to investigate multiple indirect Big Five personality influences on professionals' annual salary while considering relevant mediators. These are the motivational variables of occupational self-efficacy and career-advancement goals, and the work status variable of contractual work hours. The motivational and work status variables were conceptualized as serial mediators (Big Five → occupational self-efficacy/career-advancement goals → contractual work hours → annual salary).

**Design/Methodology/Approach** We realized a 4 year longitudinal survey study with 432 participants and three points of measurement. We assessed personality prior to the mediators and the mediators prior to annual salary.

**Findings** Results showed that except for openness the other Big Five personality traits exerted indirect influences on annual salary. Career-advancement goals mediated influences of conscientiousness (+), extraversion (+), and agreeableness (–). Occupational self-efficacy mediated influences of neuroticism (–) and conscientiousness (+). Because the influence of occupational self-efficacy on annual salary was fully mediated by contractual work hours, indirect personality influences via occupational self-efficacy always included contractual work hours in a serial mediation.

**Implications** These findings underline the importance of distal personality traits for career success. They give further insights into direct and indirect relationships between

personality, goal content, self-efficacy beliefs, and an individual's career progress.

**Originality/Value** Previous research predominantly investigated direct Big Five influences on salary, and it analyzed cross-sectional data. This study is one of the first to investigate multiple indirect Big Five influences on salary in a longitudinal design. The findings support process-oriented theories of personality influences on career outcomes.

**Keywords** Personality (Big Five) · Occupational Self-efficacy · Career goals · Salary · Longitudinal study

Despite the same educational background and comparable labor market conditions, some people are more successful in their careers and earn more money than others. Career success is not only a result of education, socio-economical background, and external labor market conditions, but it also results from individual differences (cf. Hall 2002). These individual differences can be distinguished into more distal and stable variables like personality and more proximal and malleable variables like expectations and goals.

We will concentrate here on individuals' objective career success (cf. Abele and Spurk 2009a; Judge et al. 1995; Nicholson and De Waal-Andrews 2005) defined by *annual salary* because it is one of the most frequent measures of objective success (cf. Ng et al. 2005) and because salary is one key facet in occupational life (Super 1970). Our study concerns 4 years of professionals' careers aged between 30 and 35 years, i.e., career success and career progress in these persons' early career phase.

This study was designed to integrate two lines of research on the impact of individual differences on salary

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into a multiple mediation model. One line of research revealed that personality has an influence on salary (e.g., Judge et al. 1999; Seibert and Kraimer 2001; see also Ng et al. 2005). The other line of research revealed that motivational variables like self-efficacy expectations (Bandura 1986, 1997; Lent et al. 1994) and personal goals (Austin and Vancouver 1996; Cantor 1990; Little 1983) influence salary (e.g., Abele and Spurk 2009b; Day and Allen 2004; Frieze et al. 2006). We argue here that personality is a more distal determinant of career outcomes that is mediated by more proximal motivational variables of self-efficacy beliefs and personal goals (e.g., Barrick and Mount 2005; Johnson 2003; Kanfer 1990; McCrae and Costa 1996) as well as by the employee's work status (i.e., contractual work hours).

Our study aims at testing this multiple mediation model of personality influences on salary. This test will be performed in a longitudinal research with a large group of professionals covering three points of measurement and a time span of 4 years. We predict that personality does influence a person's salary. However, this influence is mediated by motivation and by the contractual work hours a person is obligated to. We aim at contributing to a more complex and a more process-oriented understanding of the influence of individual differences on career outcomes within unselected samples of professionals (cf. Gelissen and de Graaf 2006; Judge et al. 1999).

## Theoretical Background and Hypotheses

### Personality and Salary

#### *The Relationship Between Personality and Salary*

Studies concerned with personality influences on salary often used measures built around the *Big Five* trait conceptualization (Goldberg 1990; McCrae and Costa 1987, 1996). According to this conceptualization, virtually all personality measures can be reduced to five traits, namely *neuroticism* (i.e., anxiety, angry hostility, depression), *extraversion* (i.e., warmth, gregariousness, assertiveness), *conscientiousness* (i.e., competence, order, dutifulness), *openness to experience* (i.e., fantasy, aesthetics, feelings), and *agreeableness* (i.e., trust, straightforwardness, altruism). Supporting the meta-theoretical framework of personality influences on individuals' objective biography (cf. McCrae and Costa 1996) many facets of work outcomes are influenced by these traits (cf. Tokar et al. 1998). The socio-economic theory of incentive-enhancing preferences (cf. Bowles et al. 2001) also suggests a personality–salary link. According to this theory, incentive-enhancing preferences are personal factors (i.e., personality), which raise

the employees' best response function. Employees with high incentive-enhancing preferences work harder at every wage rate. If these incentive-enhancing preferences are recognized by the employer, the "good worker" will be paid more than the "bad worker".

A meta-analysis by Ng et al. (2005; studies conducted until 2003; mainly cross-sectional studies) revealed that (1) extraversion, (2) conscientiousness, and (3) openness (negligible) had positive effects on salary, whereas (4) neuroticism and (5) agreeableness had negative effects (for similar longitudinal results see Judge et al. 1999). In an extensive literature review, we identified nine additional studies addressing the Big Five–salary link, which were not mentioned in the meta-analysis by Ng and colleagues (Dilchert and Ones 2008; Ferris et al. 2001; Gelissen and de Graaf 2006; Hülshager et al. 2006; Nyhus and Pons 2005; Palifka 2009; Rode et al. 2008; Sutin et al. 2009; Waldman and Korbar 2004). They revealed similar results as the ones reported in the meta-analysis by Ng and colleagues. Except from openness, all other Big Five traits showed relatively consistent effects throughout the studies.

Although, we are mainly interested in indirect influences of personality, we state Hypothesis (1) on the relationship between personality and salary for completeness reasons and also because it is a precondition for the analysis of mediation (cf. Baron and Kenny 1986).

**Hypothesis 1** (a) Extraversion and conscientiousness *positively* relate to salary, whereas (b) agreeableness and neuroticism *negatively* relate to salary.

We do not state a hypothesis on the relationship between the fifth Big Five factor, openness, and salary because empirical findings are highly inconsistent (see above). It is well conceivable that the kind of relationship between openness (e.g., searching for new occupational opportunities or spending much time on intellectual and creative activities) and salary depends on the kind of employment. However, in this case we are interested in the complete Big Five Factor model of personality and therefore we will analyze the relationship between openness and salary in an explorative fashion.

#### *Indirect Influences of Personality on Salary*

Several theoretical approaches (e.g., Cantor 1990; Hogan 1983; Lent et al. 1994; Little et al. 1992; McCrae and Costa 1996) focus on indirect personality influences on work outcomes. Although, there were several calls to identify respective intervening mechanisms (e.g., Johnson 2003; Kim et al. 2009), we found only two studies that analyzed the influence of personality on salary mediated by third variables. One study analyzed how the personality variables of social potency, achievement, and stress reaction

influence salary mediated by leadership role occupancy (cf. Zhang and Arvey 2009). The other research (cf. Boudreau et al. 2001) studied the impact of the Big Five on remuneration mediated by motivational indicators and by human capital. Results showed that agreeableness (negative) and extraversion (positive) exerted the most consistent indirect influences on remuneration. Both studies, however, were confined to the specific groups of leaders and executives.

Present Research

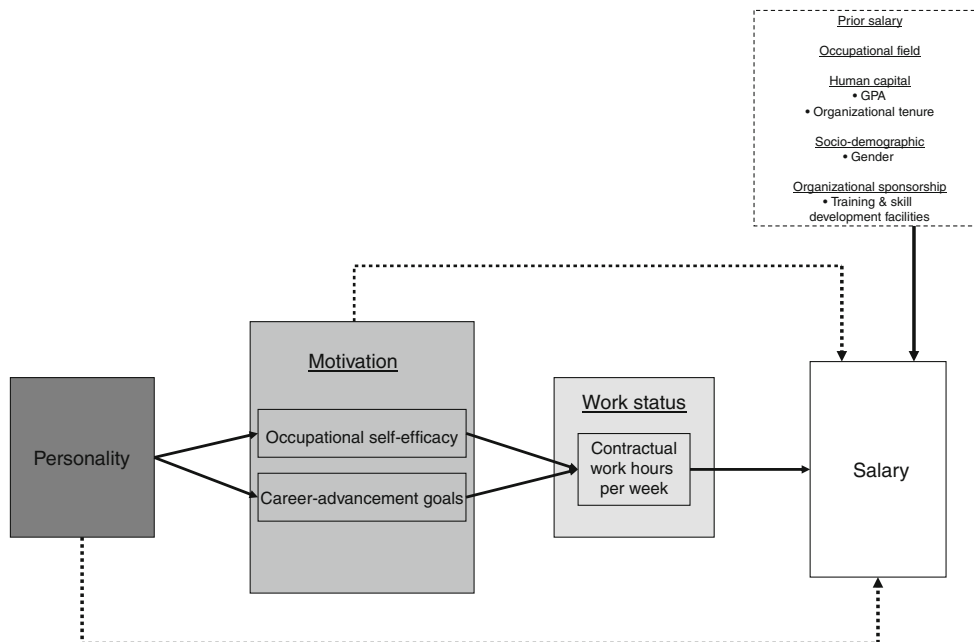
In this study, we rely on process-oriented personality (e.g., McCrae and Costa 1996) and career (e.g., Lent et al. 1994) theorizing and argue that the influence of personality on career outcomes, especially on salary, is mediated by serial mediation processes in a multiple mediation model. Our theoretical model is depicted in Fig. 1. Bold lines refer to direct influences between study variables and dotted lines refer to partial mediation.

First, *personality* (i.e., the *Big Five*) should have an influence on the *motivational* variables of *occupational self-efficacy* beliefs and *career-advancement goals*. Both of these motivational variables play a central role in process-oriented theories of career outcomes (cf. Cantor 1990; McCrae and Costa 1996; Lent et al. 1994) and have been identified as relevant predictors of salary (cf. Abele and Spurk 2009b; Valcour and Ladge 2008). Second, these motivational variables should have an influence on *work status*. We conceptualize work status as the second

mediator because work status is a central indicator for a person’s employment quality (Zikic and Klehe 2006) and affects several career-related outcomes (Conway and Briner 2002). Work status reflects psychological variables like career and organizational commitment (Blau 1989), the fulfillment of psychological contracts, organizational citizenship behavior, intention to quit, affective well-being, and job satisfaction (cf. Conway and Briner 2002). Research has shown that motivational variables like the desire for more or less responsibility in one’s job or the desire to have more leisure time (cf. Wetzel et al. 1990) influence work status. Furthermore, a person’s self-confidence (Zikic and Klehe 2006) also influences work status. We here specify work status as the number of *contractual work hours per week* (cf. Haring et al. 1984). Contractual work hours are the amount of work hours an employee has agreed to perform, excluding overtime as well as extra work on weekends or in holidays. It is no indicator of overwork or under-work. Work status should have a direct influence on salary (cf., Ng et al. 2005). Because salary can be influenced by third variables we considered statistical controls in the theoretical model (see dashed lined field in Fig. 1). We will now discuss the theoretical model in more detail.

Direct Influences of Personality on Occupational Self-Efficacy and Career-Advancement Goals

McCrae and Costa (1996) argued that personality influences characteristic adaptations that refer to personal



**Fig. 1** Theoretical process model for influences from personality to salary. Shaded grey fields refer to different conceptual constructs, dark grey fields personality, medium grey fields motivation, light grey

fields work status, dashed lined fields control variables, dashed lined arrows possibility of partial mediation, we will refer to this labeling in Fig. 2 on empirical findings

strivings, attitudes, motivational states, and self-regulatory tendencies, which in turn influence the objective biography. Career-advancement goals and occupational self-efficacy can be considered as characteristic adaptations, because they result from the interaction of personality with the private or work environment (e.g., Gist and Mitchell 1992) and because they are more malleable than personality (Bandura 1986; Roberts et al. 2004). Socio-cognitive career theory (cf. Lent et al. 1994) states that personality is an antecedent of self-efficacy beliefs.

Socio-analytic personality theory (cf. Hogan 1983) argues that personal goals are the central link between dispositions and many social (work) contexts people choose throughout their lives. Summarizing, personality should influence cognition and motivation for “*what would be important to do for you*” (personal goals) and “*how confident will you be doing it*” (self-efficacy). However, which personality traits correspond to career-advancement goals, and which correspond to occupational self-efficacy?

Studies addressing the link between personality and occupational self-efficacy or conceptually related constructs found negative correlations of self-efficacy with neuroticism and positive correlations with extraversion and conscientiousness (e.g., Hartman and Betz 2007; Nauta 2004; Rogers et al. 2008; Schaub and Tokar, 2005; Schyns and von Collani, 2002; Thoms et al. 1996). Studies on work values, which are conceptually related to career-related personal goals, showed that values of “influence”, “earnings”, “prestige”, and “competition” were positively correlated with extraversion and conscientiousness and negatively correlated with agreeableness (e.g., Berings et al. 2004; Furnham et al. 2005; Hirschi 2008; Rogers et al. 2008; for similar results on life goals see also: Roberts and Robins 2000).

Consider as an example an individual high in conscientiousness and extraversion, and low in neuroticism. This individual should develop high occupational self-efficacy beliefs for several reasons. He/she has better chances to perform successfully on career-related tasks (high conscientiousness). High performers usually show higher levels of self-efficacy beliefs (e.g., Stajkovic and Luthans 1998). He/she will seek interpersonal contact and therefore will get more interpersonal feedback at work (high extraversion). Feedback seeking is an important source of self-efficacy expectations (e.g., Nease et al. 1999; Bandura 1986). Finally, he/she will interpret various occupational situations in a more positive way compared to people with high neuroticism. Positive evaluations of the environment and the self are fundamental sources of self-efficacy beliefs (e.g., Judge et al. 2003).

As another example, career-advancement goals concerning money, prestige, and the hierarchical position might be fostered by high conscientiousness and

extraversion as well as by low agreeableness. Individuals who set themselves these goals experience that they have the necessary motivation and perfectionism to match the requirements for a challenging occupational career (conscientiousness); they appreciate the frequent interpersonal contact associated with a high status position (extraversion); and they possess the required tough-mindedness, which is also aligned with climbing the career ladder (low agreeableness). According to trait-activation theory (Tett and Burnett 2003), relevant trait-activating situations in organizations are success and promotion opportunities for conscientiousness; human relations and employee-of-the-month award programs for extraversion; and aggression and downsizing for low agreeableness. Career-advancement goals have the potential to navigate behavior into these potentially salary-related situations.

**Hypothesis 2** (a) Extraversion and (b) conscientiousness *positively* influence occupational self-efficacy; (c) neuroticism *negatively* influences occupational self-efficacy.

**Hypothesis 3** (a) Extraversion and (b) conscientiousness *positively* influence career-advancement goals; (c) agreeableness *negatively* influences career-advancement goals.

#### Direct Influences of Occupational Self-Efficacy on Contractual Work Hours and Salary

*Self-efficacy* is defined as individuals’ beliefs about their capabilities to perform some behavior or to meet a standard (Bandura 1986, 1997). According to socio-cognitive theorizing (Bandura 1986, see also Betz and Hackett 2006) individuals with high self-efficacy beliefs set higher goals for themselves, put in more effort, and persist longer on a difficult task. *Occupational self-efficacy* is an individual’s belief in his/her capacities to successfully perform occupational tasks and challenges and to pursue an occupational career irrespective of the particular field of occupation (e.g., Abele et al. 2000). Importantly, occupational self-efficacy beliefs are more malleable than a trait-like construct of generalized self-efficacy beliefs (e.g. Schyns and von Collani 2002) and at the same time broader than task specific self-efficacy, which is advantageous in predicting specific outcomes (cf. Chen et al. 2001; Pajares 1996). Research has shown that self-efficacy beliefs have a positive influence on salary (Abele and Spurk 2009b; Day and Allen 2004; Kim et al. 2008; Valcour and Ladger 2008). There is also one study that reported a positive correlation between job-related self-efficacy and work hours (cf. Jex and Gudanowski 1992).

We did not find studies that analyzed the influence of self-efficacy on work status (i.e., contractual work hours). Somewhat related to this question, however, other research has shown that self-efficacy affects job interview and employment outcomes (Moynihan et al. 2003), career

planning (Cardoso and Moreira 2009), and reemployment quality (i.e., part-time vs. full-time) via career planning activities (Zikic and Klehe 2006). We conclude that people high in self-efficacy should be more successful in closing work contracts because they plan their career more effectively and show higher levels of job search behavior. We, hence, postulate that self-efficacy beliefs should directly influence contractual work hours as well as salary. Finally, many studies have revealed that the more people work the more they will earn (e.g., Ng et al. 2005).

**Hypothesis 4** Occupational self-efficacy beliefs *positively* influence contractual work hours.

**Hypothesis 5** Occupational self-efficacy beliefs *positively* influence salary.

**Hypothesis 6** Contractual work hours *positively* influence salary.

#### Direct Influences of Career-Advancement Goals on Contractual Work Hours and Salary

Goals are internally represented desired states (Austin and Vancouver 1996) and aims of an action (Locke and Latham 1990, 2002). Goals are assumed to influence outcomes by directing attention, mobilizing effort, affecting persistence, and structuring behavior. *Personal goals* are middle-level units (Cantor 1990; Little 1983) that allow long-term orientation and regulation of one's actions. *Career-advancement goals* refer to the persons' occupational life and work domain. More specifically, they refer to having power and influence, earning much money, as well as being in a prestigious position and high in status (Abele and Spurk, 2009b). Frieze et al. (2006) showed that materialistic work values (e.g., making a lot of money) positively influenced salary up to 26 years later and Abele and Spurk (2009b) also revealed a positive longitudinal influence of career-advancement goals on salary.

We postulate that career-advancement goals should have an influence on work status such that people with higher career-advancement goals also have higher contractual work hours than people with lower career-advancement goals. Goals related to career progress and career success are better accomplished in employments with a high number of contractual work hours. One study has already shown that persons with upward orientations worked more on a contractual basis compared to people without upward orientations (cf. Gerber et al. 2009).

**Hypothesis 7** Career-advancement goals *positively* influence contractual work hours.

**Hypothesis 8** Career-advancement goals *positively* influence salary.

#### Occupational Self-Efficacy, Career-Advancement Goals, and Contractual Work Hours as Mediators of Personality Influences on Salary

Derived from our theoretical model (see Fig. 1), we state the following mediation hypotheses.

**Hypothesis 9** Occupational self-efficacy beliefs partially mediate the influence of personality on salary.

**Hypothesis 10** Career-advancement goals partially mediate the influence of personality on salary.

**Hypothesis 11** Contractual work hours partially mediate the influence of occupational self-efficacy on salary.

**Hypothesis 12** Contractual work hours partially mediate the influence of career-advancement goals on salary.

**Hypothesis 13** Occupational self-efficacy beliefs and subsequent contractual work hours partially mediate the influence of personality on salary.

**Hypothesis 14** Career-advancement goals and subsequent contractual work hours partially mediate the influence of personality on salary.

Empirically, we will test our model in a longitudinal study with three points of measurement. We first assessed personality, 2 years later we assessed occupational self-efficacy and career-advancement goals, and again 2 years later we assessed contractual work hours and salary. From a methodological point of view, mediation is best tested in a design in which the predictor is measured in advance of the mediator and both are measured in advance of the criterion (cf. Cole and Maxwell 2003). From a conceptual point of view, career theory (Hall 2002) suggests that time is an important variable and outcomes with respect to work-related behaviors need time to develop. Influences of personality on motivation (self-efficacy, goal content) need time to unfold; and influences of motivation on salary also take time to unfold. Therefore, we chose time spans (always 2 years), which are long enough to unfold these effects (cf., Gibbs and Hendricks 2004; Gist and Mitchell 1992; Salmela-Aro et al. 2000). We assessed contractual work hours at the same time as salary, because we assume that current contractual work hours are the most relevant basis for current salary.

Since salary can be influenced by further variables, we also considered other relevant predictor variables (statistical controls) in the model. These were not specifically captured in the hypotheses, since they were not the focus of our study. We statistically controlled for four relevant classes of predictor variables of salary, namely human capital [i.e., organizational tenure, Grade Point Average (GPA)], organizational sponsorship (i.e., training and skill development facilities), socio-demographic variables

(i.e., gender), and field of occupation (i.e., private enterprise vs. public sector). Finally, we included salary in the year 2004 as an autoregressor. By this means, we wanted to account for possible influences of salary in the year 2004 on the personality measures at the same time. Our general model, hence, predicts that portion of salary in the year 2008 that did not have the potential to influence the personality measures. We controlled contractual work hours in the year 2008 for contractual work hours in the year 2004 because work hours may change over time. We further controlled for gender because due to their higher involvement in family issues women tend to work less than men (Abele and Spurk, in press; Valcour and Tolbert 2003).

## Method

### Participants

We tested the hypotheses with data collected in a prospective longitudinal study with a sample of professionals who had graduated with a master's degree in science at different German universities in 1999. We first contacted our participants immediately after their final exams. They received further questionnaires in the year 2004, in 2006, and in 2008. The study was part of a larger project on women and men in science (see Abele et al. 2004). Data from previous waves have been reported elsewhere (e.g. Abele and Candova 2007; Cohrs et al. 2006), but this is the first time that we report findings on salary and personality, and of the waves from 2006 and 2008.

### Procedure

The universities' graduation offices contacted potential participants and sent them a questionnaire. From the 1,200 questionnaires sent out, 623 (51.9%) were returned to the researchers. Participants were representative according to the gender distribution and with respect to the Germany-wide GPA of master graduates in the respective subjects in 1999.

#### *Questionnaire in the Year 2004*

Of the 563 participants who could be contacted 4.5 years after graduation, 440 (131 women, 309 men; mean age 32.05 years) responded (response rate 78%). Among other variables, we measured the Big Five personality traits, contractual work hours, and assessed participants' salary.

#### *Questionnaire in the Year 2006*

Of the 505 participants who could be contacted in 2006, 428 participants (126 women and 302 men; mean age

34.39 years) responded (response rate 85%). Among other variables, we collected data on occupational self-efficacy and on career-advancement goals.

#### *Questionnaire in the Year 2008*

Of the 477 participants who could be contacted in 2008, 419 participants (124 women and 295 men; mean age 36.61 years) responded (response rate 88%). Among other variables, we collected data on participants' salary, organizational tenure, training and skill development facilities, and on their contractual work hours. Dropout analyses (gender, age, and GPA) revealed that there were no differences in answers to the first questionnaire (1999) between participants who answered the 2004, 2006, or 2008 questionnaire and those who did not.

### *Final Sample*

The final sample comprised participants who had answered the first questionnaire and at least one of the further ones (2004 or 2006 or 2008). These were 432 persons (106 women, 326 men; mean age 2008:  $M = 36.61$ ,  $SD = 2.26$ ).  $N = 415$  participants had completed the year 2004 questionnaire (17 missing values on the personality measures),  $N = 401$  participants had completed the year 2006 questionnaire (31 missing values on the self-efficacy and goals measures), and  $N = 393$  participants had completed the year 2008 questionnaire (39 missing values on the contractual work hours and salary measures). All missing data resulted from time-specific drop-outs of the respective participants.  $N = 366$  participants had completed all questionnaires.

Participants worked in private enterprises (91%), mainly in private service firms, insurance companies, the banking sector, and the industry, or in the public sector (9%), mainly in universities. Frequent job titles were, for instance, software engineer or IT-consultant. Throughout the time interval looked at here participants were more or less continuously employed (on average not more than 3% of the time was spent with breaks in employment) and they received about two promotions on average. It was, hence, a time of career progress. We excluded participants with less than ten contractual work hours because these persons did not have regular employments.

## Measures

### *Personality*

We measured the Big Five personality traits with a German version (Borkenau and Ostendorf 1991) of the NEO-FFI (McCrae and Costa 1987). Because of space restrictions,

we could not use the complete 12 items subscales. Instead, we always selected the six items with the highest factor loadings on the respective subscale. Internal consistencies ranged between Cronbach's  $\alpha = .70$  and Cronbach's  $\alpha = .78$ .<sup>1</sup>

#### *Occupational Self-Efficacy*

The scale (Abele et al. 2000, see also Abele and Spurk 2009b) consists of 6 items (sample items “I am confident that I could deal efficiently with the challenges my occupation provides if I only want to”; “I have no difficulties in achieving my occupational goals”; Cronbach's  $\alpha = .75$ ). Participants responded on 5-point scales (1 = *not at all* to 5 = *very much*).

#### *Career-Advancement Goals*

The scale we used to measure career-advancement goals consists of 5 items (see also Abele and Spurk 2009b). Participants responded on 5-point scales (1 = *not important* to 5 = *very important*; sample items “I want to gain high *occupational reputation*”; “I want to have good *career opportunities*”; Cronbach's  $\alpha = .82$ ).

#### *Contractual Work Hours*

We asked our participants to report their *contractual work hours per week*, i.e., their weekly work hours according to the actual contract with their organization (“Please indicate your contractual volume of employment per week”). This measure was taken in the years 2004 and 2008. In the year 2008,  $N = 328$  (83.4%) of our participants worked full-time (minimally 38 contractual hours), and  $N = 65$  (16.6%) worked part-time (less than 38 contractual hours; cf. Thorsteinson 2003). Among the full time-employed participants  $N = 175$  (44.6%) reported 40 contractual work hours per week.

<sup>1</sup> In a pretest with 68 students (mean age 23 years), we tested the reliability of the short version of the personality measure and we also assessed its correlation with the longer 60 items version. The reliability results were as follows: Extraversion Cronbach's  $\alpha = .70$  (12-item scale: Cronbach's  $\alpha = .76$ ); Neuroticism Cronbach's  $\alpha = .78$  (12-item scale: Cronbach's  $\alpha = .87$ ); Conscientiousness Cronbach's  $\alpha = .73$  (12-item scale: Cronbach's  $\alpha = .86$ ); Agreeableness Cronbach's  $\alpha = .71$  (12-item scale: Cronbach's  $\alpha = .73$ ); Openness Cronbach's  $\alpha = .74$  (12-item scale: Cronbach's  $\alpha = .72$ ). The correlations between the short version and the longer one were: Extraversion  $r = .89$ ; Neuroticism  $r = .96$ ; Conscientiousness  $r = .93$ ; Agreeableness  $r = .92$ ; Openness  $r = .88$ . These data suggest that the short version measures the Big Five as reliably as the longer 60-item version.

#### *Salary*

We measured salary by *annual salary before taxes* in twelve equal steps from “*less than €10,000*”, coded as 1 to “*less than €100,000*”, coded as 10; and “*more than €100,000*”, coded as 11 (in 2008 one Euro was about 1.50\$). Salaries below €20,000 are conceivable, because of participants with 10 to 38 contractual work hours per week (see above).

#### *Grade Point Average (GPA)*

In the German University system grades range from “1” (very good) to “5” (failed). Hence, higher numbers represent lower grades. We recoded the grades such that higher numbers represent higher grades, because in this way correlations are easier to interpret.

#### *Organizational Tenure*

In the year 2008 we asked our participants' to report the year, in which they entered their actual employment. We built the organizational tenure variable from this information by coding the number of years in the organization.

#### *Training and Skill Development Facilities*

We asked our participants' to what extent their organization provides training and skill development facilities. Participants responded on a 5-point item (1 = *not at all* to 5 = *very much*).

#### *Gender*

We coded gender as 0 = female and 1 = male.

## **Results**

### Analytical Procedure and Model Building

#### *Analytical Procedure*

We tested Hypothesis (1) on the bivariate relationship of personality and salary by estimating longitudinal correlations between the personality measures in the year 2004 and salary in the year 2008. All other Hypotheses (2 – 14) were tested by means of structural equation modeling (SEM). Regarding treatment of missing values (see above) we decided to apply a full information maximum likelihood procedure, because this procedure is based on the less restrictive assumption of missing at random (MAR) than other procedures for treating missing data such as list-wise

deletion.<sup>2</sup> All analyses were conducted with Mplus (Muthén and Muthén, 1998–2007; version 5).

We pursued a two-step modeling approach. First, we tested the measurement model of the latent variables we used in the analyses. Second, we built a structural model that should be most parsimonious and captures the data on an adequate level (cf. Cole and Maxwell, 2003). In the mediation analysis, we tested the significance of direct and indirect influences within the SEM. Full mediation is indicated by significant indirect influences and non-significant direct influences. Partial mediation is indicated by both significant direct and indirect influences (cf. Kline 2005). Finally, we reanalyzed the data with a dichotomized contractual work hour variable that represents part-time vs. full-time work status. We did this because part-time vs. full-time work is an important distinction in the labor market. Furthermore, such a reanalysis represents a test for the stability of our results.

### Model Building

We first tested the *measurement model* for the latent variables. Following recommendations in the SEM literature (cf. Little et al. 1999), the latent variables with six items were measured by three parcels each. The measurement model comprised occupational self-efficacy, career-advancement goals, and the Big Five. The model had reasonable fit statistics ( $\chi^2/df = 1.82$ , CFI = .94, TLI = .92, RMSEA = .04; SRMR = .05), and all factor loadings were highly significant (see Appendix).

In the *structural model*, we used the latent variables and allowed paths in line with our hypotheses (see above). Additionally, we regressed salary (year 2008) on all statistical controls (GPA, gender, organizational tenure, training, and skill development facilities, field of occupation, and salary in the year 2004). Also, we regressed contractual work hours on gender. Correlations between exogenous variables (Big Five and statistical controls) were estimated freely as a standard setting in SEM

<sup>2</sup> Missing at random (MAR) assumes that the probability of missing values depends on observed variables. If, for instance, the probability of responding is higher for persons with better GPA and GPA is included into the model then MAR is suitable and missing values should be treated by full information maximum likelihood approach (cf. Little and Rubin 2002). In contrast, treating missing data by means of list-wise deletion presumes an even more restrictive assumption, which is the assumption of missing completely at random (MCAR) (cf. Little and Rubin 2002), i.e., the probability of assessment is independent of observed and unobserved variables as well as independent of time. We therefore assume that MAR is the more suitable approach here. Nevertheless, we also tested whether the kind of treatment of missing values had an effect on the findings by comparing a model with list-wise deletion of missing values with our full information maximum likelihood approach. The results were by and large the same.

regression analysis (cf. Kline 2005). The modification indices suggested correlations between contractual work hours in the year 2008 and salary in the year 2004, between career-advancement goals and gender/skill development facilities/contractual work hours in the year 2004/salary in the year 2004, and between career-advancement goals and occupational self-efficacy. We allowed these correlations to be estimated. The final model had reasonable fit statistics ( $\chi^2/df = 1.60$ , CFI = .93, TLI = .91, RMSEA = .04; SRMR = .05, see also Kline 2005).

As outlined in the introduction, we were interested in testing the influences of all Big Five traits including openness, although we had not stated a Hypothesis on openness. We therefore compared the above model with two alternative models and assessed the comparative model fits. In the first alternative model, we tested whether openness had an influence on salary in the year 2008 by allowing an additional path from openness to salary in the year 2008. This model did not differ significantly by a  $\chi^2$ -difference test from the model where the path from openness to salary was excluded ( $\Delta\chi^2[1] = .06$ ,  $p = .81$ ). In the second alternative model, we tested paths from all Big Five traits on occupational self-efficacy and career-advancement goals. This model did not differ significantly by a  $\chi^2$ -difference test from the model where only the hypothesized paths from personality to occupational self-efficacy and career advancement goals were included ( $\Delta\chi^2[4] = 3.66$ ,  $p = .45$ ). Since these alternative models had no better fit indices than our proposed theoretical model we will concentrate on our more parsimonious hypothesized model and we will report results for this model.

### Results—Correlations

The zero-order correlations between the latent constructs and all other variables can be seen in Table 1. In support of Hypothesis (1), we found longitudinal correlations of personality with salary in the year 2008. Conscientiousness ( $r = .19$ ,  $p < .01$ ) and extraversion ( $r = .16$ ,  $p < .01$ ) were positively correlated with salary, agreeableness ( $r = -.19$ ,  $p < .01$ ) and neuroticism ( $r = -.25$ ,  $p < .001$ ) were negatively correlated with salary. Openness and salary were uncorrelated ( $r = .02$ , ns).

### Results—Structural Equation Modeling

#### Direct Influences

Hypothesis (2) was fully supported because we found influences in the specified direction from conscientiousness ( $\beta = .33$ ,  $p < .001$ , see also Fig. 2), neuroticism ( $\beta = -.35$ ,  $p < .001$ ), and extraversion ( $\beta = .13$ ,  $p < .05$ ) on occupational self-efficacy. Personality explained 33% of

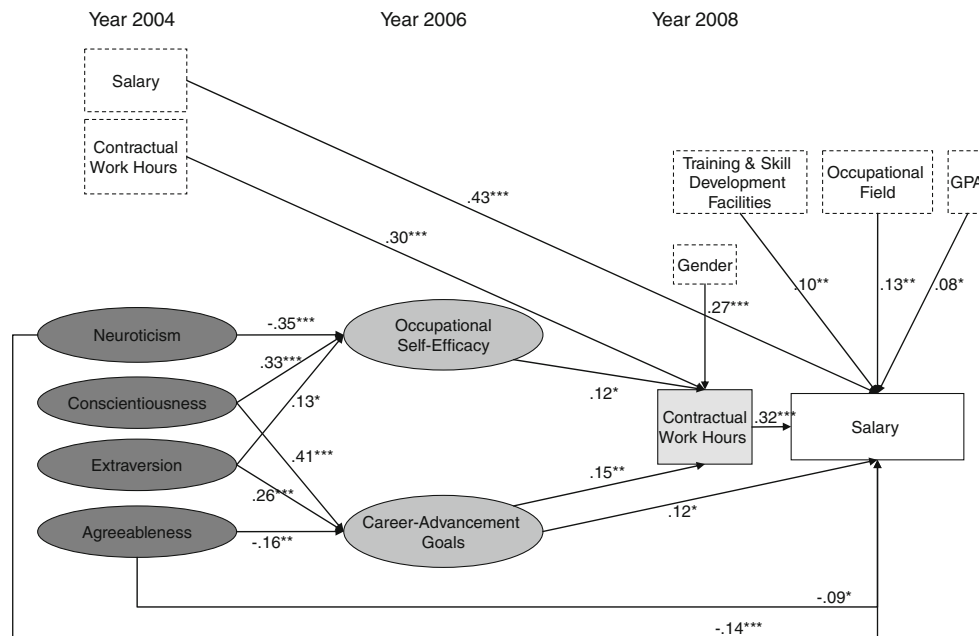


**Table 1** Means, standard deviations, and correlations among study variables ( $N = 432$ )

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Gender (0 = female, 1 = male)			.00														
2 Occupational field (0 = public sector, 1 = private enterprise)				.00													
3 GPA <sup>a</sup>	4.34	.72	-.05	-.15													
4 Neuroticism in 2004 <sup>b</sup>	2.41	.71	-.20	-.17	-.11												
5 Extraversion in 2004 <sup>b</sup>	3.41	.64	-.14	.07	-.03	-.33											
6 Conscientiousness in 2004 <sup>b</sup>	3.67	.57	.09	.02	.10	-.22	.15										
7 Agreeableness in 2004 <sup>b</sup>	3.86	.61	-.12	-.04	.00	-.19	.15	.09									
8 Openness to experience in 2004 <sup>b</sup>	3.59	.72	.07	-.08	.15	.03	.19	.15	.09								
9 Occupational self-efficacy in 2006 <sup>b</sup>	4.00	.61	.15	.10	-.02	-.45	.29	.41	.09	.16							
10 Career-advancement goals in 2006 <sup>b</sup>	3.32	.80	.16	-.02	.02	-.05	.29	.41	-.11	.01	.35						
11 Training & skill development in 2008 <sup>b</sup>	3.52	.04	.03	-.08	.14	-.20	.19	.23	.06	.10	.22	.33					
12 Organizational tenure in 2008 <sup>c</sup>	6.15	.20	.00	.15	-.16	-.04	.03	.03	.04	-.21	.09	-.01	-.04				
13 Contractual work hours per week in 2004	38.57	5.33	.30	-.10	-.07	-.06	.09	.14	-.12	.03	.21	.27	.09	.05			
14 Contractual work hours per week in 2008	37.82	6.34	.36	-.01	.00	-.10	.07	.05	-.03	.13	.23	.29	.15	-.07	.40		
15 Salary in 2004 <sup>d</sup>	5.22	1.94	.23	.19	.01	-.08	.14	.18	-.19	-.06	.15	.28	.16	.14	.66	.34	
16 Salary in 2008 <sup>d</sup>	6.94	2.37	.28	.19	.10	-.25	.16	.19	-.19	.02	.25	.40	.29	-.03	.43	.58	.60

Note: For  $r_s > .20, p < .001$ ; for  $r_s > .15, p < .01$ ; for  $r_s > .10, p < .05$

<sup>a</sup> Values from 1 (bad) to five (very good), <sup>b</sup> Scales from 1 (low) to 5 (high), <sup>c</sup> Measured in years, <sup>d</sup> Values from 0.5 (lowest) to 11 (highest) Values were estimated by a full information maximum likelihood approach with Mplus Version 5



**Fig. 2** Structural equation model predicting salary in the year 2008.  $\chi^2$  value(632.89)/df(378) = 1.74,  $N = 432$ , CFI = .93, TLI = .91, RMSEA = .04, SRMR = .05,  $R^2$  salary in the year 2008 = .59, \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , only significant paths displayed, significant correlations and measurement models for clarity reasons not displayed, openness is not displayed because of no significant

influences of this trait, oval fields represent latent constructs, rectangular fields represent manifest constructs, shaded grey fields refer to shaded grey fields in Fig. 1, *dark grey fields* personality, *medium grey fields* motivation, *light grey fields* work status, *dashed lined fields* control variables

the variance in occupational self-efficacy. Hypothesis (3) was fully supported because we found influences in the specified direction from extraversion ( $\beta = .26$ ,  $p < .001$ ), conscientiousness ( $\beta = .41$ ,  $p < .001$ ), and agreeableness ( $\beta = -.16$ ,  $p < .01$ ) on career-advancement goals. Personality explained 27% of the variance in career-advancement goals. In support of Hypothesis (4), we found a positive influence of occupational self-efficacy on contractual work hours in the year 2008 ( $\beta = .12$ ,  $p < .05$ ). Hypothesis (5) was not supported, because we found no significant influence of occupational self-efficacy on salary in the year 2008 ( $\beta = .00$ , ns). In support of Hypothesis (6), we found a positive influence of contractual work hours in the year 2008 on salary in the year 2008 ( $\beta = .32$ ,  $p < .001$ ). Hypotheses (7) and (8) were supported because we found positive influences of career-advancement goals on contractual work hours in the year 2008 ( $\beta = .15$ ,  $p < .01$ ) and salary ( $\beta = .12$ ,  $p < .05$ ) in the year 2008.

### Indirect Influences

For testing Hypotheses (9) to (14) on mediation, we compared direct and specific indirect influences of personality, occupational self-efficacy, and career-advancement goals on year 2008 salary. Specific indirect influences are computed by multiplying the  $\beta$ -values of two (or more) single paths (for instance, the path from conscientiousness on

career-advancement goals multiplied with the path from career-advancement goals on salary).

Hypothesis (9) was not supported. Because there was no direct influence of occupational self-efficacy on salary in the year 2008, occupational self-efficacy did also not mediate the Big Five influences. Hypothesis (10), however, was partially supported. There was a positive significant indirect influence of conscientiousness ( $.047$ ,  $p < .05$ ) and extraversion ( $.030$ ,  $p < .05$ ) on salary in the year 2008 mediated by career-advancement goals (see Table 2). The predicted indirect influence of agreeableness on 2008 salary mediated by career-advancement goals failed significance.

Hypotheses (11) and (12) were supported because there were significant indirect influences of occupational self-efficacy ( $.038$ ,  $p < .05$ ) and career-advancement goals ( $.048$ ,  $p < .01$ ) on salary in the year 2008 mediated by contractual work hours in the year 2008. In case of occupational self-efficacy, it was full mediation (direct influence:  $\beta = .00$ , ns) and in case of career-advancement goals it was partial mediation (direct influence:  $\beta = .12$ ,  $p < .05$ ).

Besides these indirect influences via one intervening variable, we also found indirect influences mediated by two subsequent variables (personality  $\rightarrow$  occupational self-efficacy or career advancement goals  $\rightarrow$  contractual work hours in the year 2008  $\rightarrow$  salary in the year 2008), which

**Table 2** Standardized direct and specific indirect influences of the big five personality traits, occupational self-efficacy, and career-advancement goals on 2008 salary ( $N = 432$ )

	Direct influence on salary 2008	Specific indirect influence on salary 2008
Extraversion 2004	-.01	
→Career-advancement goals 2006		.030* <sup>a</sup>
→Occupational self-efficacy 2006		.000
→Career-advancement goals 2006 → Contractual work hours 2008		.012*
→Occupational self-efficacy 2006 → Contractual work hours 2008		.005
Conscientiousness 2004	-.04	
→Career-advancement goals 2006		.047*
→Occupational self-efficacy 2006		.000
→Career-advancement goals 2006 → Contractual work hours 2008		.019*
→Occupational self-efficacy 2006 → Contractual work hours 2008		.013*
Agreeableness 2004	-.09*	
→Career-advancement goals 2006		-.017
→Career-advancement goals 2006 → Contractual work hours 2008		-.008*
Neuroticism 2004	-.14***	
→Occupational self-efficacy 2006		.000
→Occupational self-efficacy 2006 → Contractual work hours 2008		-.013*
Occupational self-efficacy 2006	.00	
→Contractual work hours 2008		.038*
Career-advancement goals 2006	.12*	
→Contractual work hours 2008		.048**

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , <sup>a</sup>for better comparability we display three decimal places for specific indirect influences, openness is not displayed because of no significant influences of this trait, for the remaining Big five traits only hypothesized specific indirect influences could be tested (9 out of 13 specific indirect influences were significant)

are in line with our Hypotheses (13) and (14) (see Table 2). There was one indirect influence of extraversion via career-advancement goals and contractual work hours on salary (.012,  $p < .05$ ). Conscientiousness had two further indirect influences on salary (via occupational self-efficacy → contractual work hours in the year 2008 and via career-advancement goals → contractual work hours in the year 2008: .013 and .019, both  $ps < .05$ ). Agreeableness had a negative indirect influence via career-advancement goals and contractual work hours in the year 2008 (–.008,  $p < .05$ ). Finally, neuroticism also exerted a negative indirect influence on salary in the year 2008 via occupational self-efficacy and contractual work hours in the year 2008 (–.013,  $p < .05$ ).

Because there were no significant direct influences of extraversion ( $\beta = -.01$ , *ns*) and conscientiousness ( $\beta = -.04$ , *ns*) on salary in the year 2008 the influences of these traits were fully mediated (cf. Kline 2005). In case of extraversion, two specific indirect influences and in case of conscientiousness three specific indirect influences were significant. Because there were still significant direct influences of neuroticism ( $\beta = -.14$ ,  $p < .001$ ) and agreeableness ( $\beta = -.09$ ,  $p < .05$ ) on salary in the year 2008, the influences of these traits were partially mediated

(cf. Kline 2005). For both the traits, one specific indirect influence was found.

#### Additional Findings

Regarding the statistical controls, year 2004 salary ( $\beta = .43$ ,  $p < .001$ ), training and skill development facilities ( $\beta = .10$ ,  $p < .01$ ), GPA ( $\beta = .08$ ,  $p < .05$ ), and field of occupation ( $\beta = .13$ ,  $p < .01$ ) had direct influences on 2008 salary. Participants with higher salaries in the year 2004 also earned more in the year 2008, participants with more training and skill development facilities earned more than participants with less such facilities, and participants employed in private enterprises earned more than participants working in the public sector. Gender had no influence on 2008 salary ( $\beta = .04$ , *ns*), but it had an influence on contractual work hours in the year 2008 ( $\beta = .35$ ,  $p < .001$ ) with women working fewer hours than men. A t-test comparing contractual work hours in the year 2008 for women ( $M = 33.18$ ) and men ( $M = 39.29$ ) revealed significant results,  $t(8.97)$ ,  $p < .001$ ,  $d = .66$ . Finally, contractual work hours in the year 2004 influenced contractual work hours in the year 2008 ( $\beta = .30$ ,  $p < .001$ ). Gender explained 15%, and career-advancement goals and

occupational self-efficacy explained 5% of the variance in contractual work hours in the year 2008 above the statistical controls. 29% of variance in contractual work hours was explained by all four predictors. The complete model explained 59% of the variance in year 2008 salary. Taken together 12% of variance in annual salary was explained by our predictors (excluding contractual work hours: 4%) above the statistical controls (without autoregressor: 26 and 12% respectively).

### Results—Dichotomized Work Hour Variable

We reanalyzed the results by dichotomizing contractual work hours in the year 2008 into a part-time versus full-time variable (0 = part-time; 1 = full-time). This procedure diminishes effects of part-time employees with very low contractual work hours so that results based on the dichotomized variable are not biased by outliers. As can be seen in Table 1, the bivariate correlations between contractual work hours and occupational self-efficacy ( $r = .23, p < .001$ ), career-advancement goals ( $r = .29, p < .001$ ), and salary in 2008 ( $r = .58, p < .001$ ) were positive and significant. The point-biserial correlations between the dichotomized part-time versus full-time variable and the same constructs corrected to a .50 base rate (cf. Hunter et al. 1982; Steel et al. 1990) revealed very similar results (dichotomized variable—occupational self-efficacy:  $r = .26, p < .01$ ; dichotomized variable—career-advancement goals:  $r = .34, p < .001$ ; dichotomized variable—salary in 2008:  $r = .67, p < .001$ ). Additionally, we calculated a multivariate regression equation based on the corrected correlation matrix, in which part-time versus full-time work was regressed on occupational self-efficacy ( $\beta = .11, p < .05$ ), career-advancement goals ( $\beta = .19, p < .001$ ), gender ( $\beta = .29, p < .001$ ), and work status in 2004 ( $\beta = .24, p < .001$ ). 29% of variance in part-time vs. full-time work was explained by all four predictors. 16% of variance was explained by gender and 7% was explained by occupational self-efficacy and career-advancement goals above the statistical controls. In sum, the influences were very similar to the analyses based on the continuous work hour variable.

### Discussion

We tested a multiple mediation model on the influences of personality mediated by motivational and work status variables on professionals' annual salary in a longitudinal research covering three waves of data collection and a time span of 4 years. Most of our direct and indirect Hypotheses were partial or full supported. Because we covered a 4-year period and we controlled for several relevant variables

including the autoregressor, the effects found in this study are not at all negligible. Beta effects between  $-.14$  (neuroticism) and  $+.32$  (contractual work hours) are in line with previous findings. Ng et al. (2005) reported population correlations (mainly cross-sectional studies) of  $-.12$  for neuroticism with salary and  $.24$  for work hours with salary. Judge and Hurst (2007) found beta effects of  $.11$  and  $.12$  in longitudinally predicting salary by core self-evaluations.

### Contribution

Previous research investigated mainly direct Big Five influences on salary and often analyzed cross-sectional data. This study is one of the first to investigate multiple indirect Big Five influences via serial mediation mechanisms in a longitudinal design. The findings provide support for process-oriented personality and career theories (cf. Hogan 1983; Lent et al. 1994). Taking all findings together, the meta-framework developed by McCrae and Costa (1996) also receives support, because both motivational mediators can be seen as characteristic adaptations derived from personality, which in turn influence the objective biography (here work status and salary). The theory of incentive-enhancing preferences (cf. Bowles et al. 2001) on direct personality influences receives some support, because there still were two direct influences of personality (neuroticism and agreeableness) on salary.

The conceptual contribution of our article is twofold. First, we show that personality traits exert their influence on salary both directly and indirectly via motivational and via work status variables. Second, we show that personality influences on salary are not only mediated by one intervening mechanism, but can also be mediated by two intervening mechanisms (here: from personality to motivational variables, to work status, to outcomes).

As an empirical contribution our findings suggest that low neuroticism and low agreeableness together with high conscientiousness and high extraversion seems to be the personality profile that positively influences salary levels mediated by high achievement- and career-related goals as well as by high self-efficacy beliefs and a full-time employment. These findings extend Barrick et al. (2002) results on the mediation of personality effects by accomplishment striving and status-striving on performance. We conclude that extraversion and conscientiousness seem to exert their influence on work-related outcomes (both salary and performance) by mediation processes. Our research also responds to claims by Boudreau et al. (2001), who stated that longitudinal investigations of personality influences on career progress should include self-efficacy as a possible mediator. Finally, concerning direct relationships between personality and salary our data show that findings

from the U.S. context (Boudreau et al. 2001; Judge et al. 1999) can be generalized to another country (Germany).

The practical contribution and implication is related to personality and to the motivational variables. It seems worthwhile that recruiters and personnel developers pay attention to both more distal personality variables and more proximal work related goals and self-efficacy expectations because all of these variables may help to find successful employees. Job applicants themselves should gain insight into their “characteristic adaptations” in order to find a successful employment. Finally, counselors should gain insight into their clients’ personal goals and most importantly match the clients’ personality and the clients’ content of occupational goals, especially in cases where the clients seem to develop mismatching goals.

### Indirect Influences of Personality on Salary

#### *Multiple Indirect Influences of Personality on Salary*

The most important findings of the present study were multiple indirect personality influences. Altogether, we found seven specific indirect personality influences. Our theoretical model (see Fig. 1) on the motivational and work status mediators of personality influences on salary was supported, because we found partial (dotted lines in Fig. 1) and full mediation of personality influences on salary via one or two (serial) mediators. Comparing mediation via occupational self-efficacy versus via career-advancement goals five of the seven indirect influences worked via career-advancement goals and they explained about two times more variance in salary than the indirect influences mediated by occupational self-efficacy. In addition, we found two indirect influences from career advancement goals and occupational self-efficacy on salary. Even after considering all other variables the direct influence from career-advancement goals on salary remained significant. Overall, we conclude that career-advancement goals are more important mediators of personality influences on salary than occupational self-efficacy beliefs.

#### *Indirect Influences via Contractual Work Hours*

Five indirect influences of personality were mediated not only by goals and self-efficacy, but also in a serial mediation by contractual work hours per week. We interpret these findings as showing that individual differences have an influence on motivation (goals, self-efficacy), which, in turn, has an influence on work status (Zikic and Klehe 2006) in terms of contractual work hours per week. Hence, we interpret this indirect path as showing that personality influences salary via motivation and via work status.

It might, however, also be argued that individual differences have a direct influence on the choice of one’s job or career decision (Luzzo and Ward 1995; Satterwhite et al. 2009; Tokar et al. 1998) and that this choice affects a person’s contractual working time independent of motivation. Other studies have shown that personality is related to job search after unemployment (Wanberg et al. 2005), to career decision-making processes (Jin et al. 2009; Shafer 2000), and to working in jobs with high or low job characteristics like autonomy, task identity, skill variety, task significance, task feedback, and complexity (Tokar et al. 1998). Whereas this interpretation cannot be ruled out, there was no correlation between personality and contractual work hours 2008 (despite openness; see Table 1). Nevertheless, both interpretations are feasible with respect to the present findings.

#### *Dichotomized Work Hour Variable*

The reanalysis of our data with a dichotomized contractual work hour variable (part-time vs. full-time) revealed the same results as the analysis with the continuous work hours variable. Since the part-time versus full-time distinction is related to other psychological career related variables like career and organizational commitment (Blau 1989), the fulfillment of psychological contracts, organizational citizenship behavior, intention to quit, affective well-being, and job satisfaction (cf. Conway and Briner 2002), the here found influences from occupational self-efficacy and career-advancement goals on part-time versus full-time work status have additional psychological relevance.

#### Additional Findings

Regarding our statistical controls, GPA had no influence on 2004 salary, but it had an influence on 2008 salary in the structural equation model. This suggests that GPA does not exert a direct effect on salary at the beginning of our participants’ career but rather is associated with work behavior that pays off after some time has passed. In contrast to many other findings (e.g., Abele 2003) gender had no influence on salary in the year 2008. This, however, is due to our present approach, in which we considered prior salary levels and work status, and in which we excluded more women than men, especially mothers working less than 10 h per week. Although, past research (e.g., Abele and Spurk, *in press*; Valcour and Tolbert 2003) identified gender as an important demographic predictor for work hours the motivational variables explained variance in contractual work hours after controlling for gender and previous contractual work hours. Most important in this context, however, the mediation model advanced here holds both for women and men.

## Limitations and Future Research

### Limitations

Three critical points should be mentioned. First, one might argue that due to the time lag it is difficult to compare the effects of the Big Five and of the motivation variables on salary. However, comparison of the effect sizes was not our main question and one could even argue that it is an advantage to have measured personality and the motivational variables at different times because common method variance in measuring personality, self-efficacy, and goals was reduced by this approach (e.g., Chan 2009; Podsakoff and Organ 1986). Second, there is a possibility that the results from the structural equation modeling may capitalize on chance, because we included some correlations into the final model that were suggested by the model test but were not postulated in the initial theoretical model. Present findings should therefore be replicated in another sample. Third, strictly speaking non-experimental studies do not allow causal inferences. Nonetheless, we are confident about the respective direction of influence because we have temporal lags of 2 and 4 years between our measures and because we included salary in the year 2004 as an autoregressor into our analyses (Zapf et al. 1996).

### Future Research

We here supposed that our participants had the work status they wanted to have, i.e., their contractual work hours were the desired ones. However, research has shown that this is not always the case (e.g., Maynard et al. 2006). Future studies should investigate dynamic relationships between individual differences, work status, and salary in more detail. Moreover, future research should study the impact of type of work hours. Whereas contractual work hours are relatively easy to assess, it is more difficult to measure discretionary work hours including extra time because this measure is open to biases and to selective memory effects. Both, however, may be important for predicting career success (cf. Ng and Feldman 2008).

Future research may also analyze the impact of the specific conceptualization of salary. We here studied annual salary before taxes, and this is the usual way how payment of professionals is conceptualized in Germany. Another possibility that might be especially suitable for samples with less human capital than the one analyzed here is to study payment on an hourly basis.

Finally, the influence of agreeableness, openness, and self-efficacy on occupational success may be moderated by the specific occupational context (Baum and Locke 2004; Seibert and Kraimer 2001). We here distinguished between private enterprises and the public sector. Future research should study occupational context effects such as position (management position vs. specialist position) or employment sector (production sector vs. service sector) in more detail.

### Conclusion

Results showed that except for openness all Big Five personality traits exerted indirect influences on annual salary. These indirect influences were multiple mediated by occupational self-efficacy, career-advancement goals, and contractual work hours. Results support a process-oriented approach to the influence of personality on career outcomes, in which the more distal personality variables have direct influences on more proximal motivational variables which, in turn, have an influence on work-status. In sum, we conclude that all mediators analyzed here are important vehicles in achieving positive salary levels over a 4-year time period.

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### Appendix

See, Table 3.

**Table 3** Factor loadings for latent constructs

Factor	Loading 1	Loading 2	Loading 3	Loading 4	Loading 5
Neuroticism in year 2004	.78	.71	.71		
Extraversion in year 2004	.86	.59	.51		
Openness in year 2004	.66	.65	.82		
Conscientiousness in year 2004	.58	.69	.67		
Agreeableness in year 2004	.74	.55	.70		
Occupational self-efficacy in year 2006	.74	.74	.75		
Career-advancement goals in year 2006	.70	.86	.55	.55	.82

Note: All factor loadings are significant on the .001 significance level

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