Fietze, Simon; Holst, Elke; Tobsch, Verena

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German Socio-Economic Panel Study (SOEP)
DIW Berlin
Mohrenstrasse 58
10117 Berlin, Germany

Contact: Uta Rahmann | urahmann@diw.de

Personality and Career - She's got what it takes

Simon Fietze*, Elke Holst†
Verena Tobsch‡

*Research Associate at the Chair of Business Studies, with particular emphasis on Leadership and Labour Relations, at the Helmut-Schmidt-University/University of the Federal Armed Forces Hamburg. Research interests: Human resources development, occupational and health protection, personality and leadership, financial employee involvement. E-mail: fietze@hsu-hh.de

†Senior Researcher at the Socio-Economic Panel Study (SOEP) at the German Institute for Economic Research (DIW Berlin) and private lecturer at the International Institute for Management at the University of Flensburg. Research interests: Labour Economics, Gender Economics; esp. leadership, gender pay gap, working hours, remittances. E-mail: eholst@diw.de

‡Research Associate at the Chair of Business Studies, with particular emphasis on Leadership and Labour Relations, at the Helmut-Schmidt University/Bundeswehr University Hamburg. Research interests: Personnel selection, work life balance, personality and leadership, financial employee involvement. E-mail: tobsch@hsu-hh.de

Abstract

The female share in management positions is quite low in Germany. The higher the hierarchical level, the fewer women there are in such positions. Men have numerous role models to follow whereas women lack this opportunity: In the executive boards of the top 200 private companies in Germany, only 2.5 percent of members are female. Many studies have focused on the influence of human capital and other "objective" factors on career opportunities. In our study, we go a step further by also looking at the impact of self-reported personality traits on gender differences in career chances. We compare managers and other white-collar employees in Germany's private sector. While bivariate results based on data from the German Socio-Economic Panel (SOEP) in 2005 show that there are significant gender differences in personality traits, multivariate estimations clearly indicate that these differences cannot account for gender differences in career opportunities. Nevertheless, personality traits might indeed play a role, albeit more indirectly: Some of the stronger career effects, such as work experience, long working hours, and labour market segregation, can also reflect differences in personality traits. These might have been influenced at an early stage by a gender-biased environment. Our results strongly stress the need for a gender-neutral environment outside and inside companies in order to enforce equal career opportunities for women and men.

Keywords: personality, gender, career, leadership
JEL Classification: J16, M12

1 Introduction

Although more than 50 percent of the German labour force is women, they are largely under-represented in leadership positions. The higher the hierarchical level, the lower the proportion of (top) female leaders. Men have numerous role models to follow, whereas women do not. Only 2.5 percent of the executive board members of the top 200 companies in Germany are female (cf. Holst & Schimeta, 2009). Numerous studies investigate career opportunities and focus on the influence of human capital and other "objective" factors. Our research goes a step further and looks at personality traits and the influence on the chances of reaching a leadership position.

Scientific interest in (personality) traits and their influence on access to leadership positions and leadership success has a long tradition. The trait theory of leadership focuses on personality traits that distinguish leaders from other employees. It aims at describing the characteristics of leaders in order to establish what factors determine professional success. It is one of the oldest theories in the field of leadership research.[1]

Empirical findings of early studies on this topic showed (weak) correlations between personality traits and career success of leaders, demonstrating that leaders and followers differ with regard to the personality traits under investigation. The results, however, were ambiguous, and the causal connections remained unclarified. This led to an adjustment – and in some cases rejection – of the approach, which was considered unsuitable for predicting the behaviour and success of (potential) leaders. Criticism of the theory focussed on its limited capacity to represent and identify (personality) traits, arguing that situative factors such as leadership functions, the environment and followers have at least an equally significant impact on leadership behaviour and leadership success (cf., for example, Delhees, 1995; Stogdill, 1948; Weibler, 2001).

At the beginning of the 1970s, new concepts were developed within the leadership research that drew on the findings of trait theory and are referred to as the "neo-trait theory of leadership" (Tisdale, 2004, p. 828). Particularly worthy of mention in this context are the concepts of neo-charismatic or transformational leadership, coined by Weber (1922) (cf., for example, Bass & Avolio, 1990; House & Shamir, 1995). These concepts are of both a theoretical and empirical nature and are based on the assumption that "transformational leadership [...] works through the one-sided change the leader brings about in the followers" (Weibler, 2001, p. 334). According to Avolio et al. (1999), transformational leadership comprises four components: influence through exemplary nature and credibility,

[1] The results of the numerous empirical studies on leadership traits that have been carried out in this context have been included in various summary papers (cf., for example, Lord et al., 1986; Stogdill, 1948; Stogdill & Bass, 1981, for an overview cf. Wunderer et al., 1980).

motivation through inspiring visions, encouragement to think creatively and independently, and individual consideration and encouragement (cf. the summary in Felfe, 2006). Both concepts deal with the personality traits of the leader.

In recent years in the field of leadership research, there has been renewed interest in the influence of personality on (working and leadership) behaviour. This interest is attributed last but not least yto the resounding success of what is referred to as the "Big Five" concept. Psychological constructs are also being used increasingly in the economic literature as explanatory variables (cf., for example, Borghans et al., 2008). Examples are the willingness to take risks with regard to selection in occupations with a high level of earnings risk/variability (Bonin et al., 2006) and the use of the Big Five to explain differences in earnings (cf. Mueller & Plug, 2006; Nyhus & Pons, 2005).

For some time now, particular attention has been paid to the issue of gender differences in leadership traits. Although many studies found evidence that female leaders are no different from male leaders when it comes to factors such as task orientation, appraisal and staff satisfaction (cf., for example, Dobbins & Platz, 1986), there are also studies that found contrary results (cf. Joy et al., 2007; Krell, 2008). One decisive factor for the inconsistency in the results is the issue of whether the research question is aimed at self-perception or the perceptions of others. Stereotypes based on traditional gender roles play an important role, particularly when it comes to the perceptions of others. The fact that leadership culture and the image of the ideal manager are male-dominated is of advantage as far as men's career opportunities are concerned (cf. the summary in Gmür, 2006). Traditional gender-specific abilities and trait attributions persist in perceptions of men and women in leadership positions: In a study by Accenture (2007), in which 2,246 middle and upper management leaders in 13 countries were surveyed about career obstacles, it was revealed that approximately half of the respondents associated individual leadership traits with male and female stereotypes. Both men and women tend to associate "soft" leadership traits with women and "hard" leadership traits with men (Table 1). A representative survey by the German Consulting Group (2005) conducted among 220 male leaders in Germany also concluded that "Female traits are not welcomed on the executive level! Men prefer to stick together." The men surveyed agreed that a top manager should be willing to take risks, be able to make decisions and to delegate, and needs to possess a high level of self-confidence and assertiveness. More than 70 percent of the men surveyed described these traits as "typically male".

Despite justified criticism of the classical trait theory of leadership, which attempts to explain that leadership success or the attainment of a higher professional status in organisations is based *solely* on personality traits, scientific research deal-

Female	Male
Aware of own weaknesses	Calm in crisis situations
Shows appreciation to others	Determined
Concerned about the staff's well-being	Visionary
Ethical	Charismatic
Consensus-oriented	Asserts his authority
Encourages women in the work environment	Regards profit maximisation as the topmost objective
Works harder than others	

Source: Accenture (2007)

Table 1: Stereotyping and leadership character

ing with the connection between career success[2] and personality is undergoing a certain renaissance and also focuses on the differences between men and women with regard to their leadership traits.[3] Neuberger (2002) emphasises weaknesses in the research design of the numerous studies on the trait theory of leadership: "The typical study uses a new method to measure two to three personality traits in a highly specific population [...]" (Neuberger, 2002, p. 235).

Our analysis is based on the extensive data base of the Socio-Economic Panel (SOEP), a longitudinal household study which contains not only personality self-perceptions but also extensive additional information on the respondents' professional and private situations. The aim of this paper is to clarify to what extent trait theory can explain differences in career opportunities between women and men when a wide population and a large number of individual career-relevant characteristics are taken into account.

Taking as a starting point the status quo of the research carried out so far on the relationship between personality and leadership (Section 2), Section 3 formulates hypotheses and research questions concerning the connection between being in a leadership position and personality traits. Subsequently (Section 4), the data base – the Socio-Economic Panel (SOEP) and the applied variables from this study – and the methods used are presented. The descriptive results report on differences regarding the personality dimensions of (female and male) leaders and non-leaders (Section 5.1). In the next step the impact of these personality dimensions on the

[2]The term career success here refers to both objective or extrinsic career success (income, the rate at which the income increases, the attainment of a higher professional status, the number of subordinate employees, etc.) and subjective or intrinsic career success (job satisfaction, self-esteem, etc.).

[3]In addition, the selection and promotion of leaders is in practice closely linked with test methods – in particular assessment centres – that attempt to measure personality traits in the tradition of the trait theory of leadership and to draw on these traits as decision criteria (cf. Neuberger, 2002).

likelihood of becoming a leader is calculated by means of multivariate estimations (Section 5.2). The final discussion (Section 6) summarises the empirical results and provides an outlook on necessary measures and on areas requiring further research.

2 Research on personality and leadership – approaches

In the discourse on leadership, personality traits are argued time and time again to affect access to leadership positions as well as leadership success. Although this theory – referred to as the trait theory of leadership – is the subject of harsh criticism amongst scientists, it still plays an important role both in the minds of those who select and promote leaders and in the minds of young leaders themselves. The important point to remember is that these ideas are often rooted in gender-specific attributions.[4] This study uses personality constructs from two approaches: the Big Five and the willingness to take risks. These are explained in more detail below. We also look at current research results and the scientific discourse.

2.1 The Big Five approach

The psychological approach known as the Big Five personality traits (also referred to as the "Five Factor Model" (FFM); cf. Costa & McCrae, 1992) is considered to be a good predictor of job performance and professional success, particularly for leaders. The main hypothesis of the concept is that personality differences between individuals can be determined on the basis of five central dimensions, i.e. neuroticism, extraversion, openness to experience, agreeableness and conscientiousness (Table 2). These personality dimensions are meant to conceive of personality as extensively as possible (thus the use of the term "Big") and are based on heterogeneous subdimensions, and it is assumed that these subdimensions fully cover the superordinate construct. The Big Five personality traits are considered to differ individually depending on behaviour and experience but to be stable for each individual over different situations. Measured on the basis of the Big Five, personality score from the age of approx. 30 years is perceived in adults as nearly constant over a period of 20 to 45 years (cf. Brandstätter, 1999; Srivastava et al., 2003). It is assumed, furthermore, that there is a normal distribution of the five personality dimensions in the overall population. High scores in the dimensions extraversion, conscientiousness and emotional stability (= low

[4] For more details on all these aspects, cf. Krell (2008) and the sources specified there.

Personality dimension	Adjectives	Relationship, study & authors
Neuroticism	anxious, depressed, self-conscious, emotional, easily irritated, worried, insecure (reverse: emotional stability)	(-) work performance (Piedmont & Weinstein, 1994) (-) intrinsic career success (Boudreau et al., 2001) (-) men's wages (Mueller & Plug, 2006)
Openness to experience	imaginative, sophisticated, inventive, versatile, intellectual, open-minded, sensitive to beauty, also referred to as intellect or sophistication	(+) men's wages (Mueller & Plug, 2006) (+) women's wages (Mueller & Plug, 2006)
Agreeableness	friendly, polite, flexible, trusting, cooperative, tolerant, forgiving, soft-hearted	(-) extrinsic career success (Boudreau et al., 2001) (-) men's wages (Mueller & Plug, 2006)
Extraversion	sociable, communicative, generous, determined, dominant, active, impulsive	(+) work performance (Piedmont & Weinstein, 1994) (+) leadership ability (Furnham et al., 1997) (+) intrinsic career success (Boudreau et al., 2001) (+) extrinsic career success (Boudreau et al., 2001)
Conscientiousness	reliable, thorough, responsible, methodical, well-organised, achievement-oriented, persistent	(+) successful leadership (Barrick & Mount, 1991; Salgado, 1997; Tett et al., 1991) (+) leadership ability (Furnham et al., 1997) (+) women's wages (Mueller & Plug, 2006)

Source: Own diagram on the basis of Schuler (2001)

Table 2: Overview of personality traits (Big Five) and impact on managerial success

neuroticism value) and low scores in the agreeableness dimension are considered to be particularly characteristic of successful leaders (cf. Barrick & Mount, 1991; Boudreau et al., 2001; Furnham et al., 1997; Piedmont & Weinstein, 1994).

It has been empirically proven that there is a highly positive link with job performance across all professional groups for the conscientiousness dimension (cf. Barrick & Mount, 1991; Tett et al., 1991; Salgado, 1997, and Table 2 for a summary). Piedmont & Weinstein (1994) succeeded in proving that there is also a negative link with the neuroticism dimension and a positive link with the extraversion dimension. That is to say, low values in the neuroticism dimension (which is equivalent to high emotional stability) and high values in the extraversion dimension go hand in hand with higher job performance. Furnham et al. (1997) studied the relationship between the Big Five and the assessment of leadership ability in 160 leaders through external consultants. They confirmed the strong influence of the conscientiousness dimension and also proved that there is a strong positive link between leadership ability and the extraversion dimension. In their study, Boudreau et al. (2001) looked at the link between the Big Five and the career success of leaders in the US and Europe. With career success as the focus of attention, a distinction is made between extrinsic factors (remuneration, influence, status, chances of being employed) and intrinsic factors (occupation, life, career satisfaction). Some of the results confirmed the findings of past studies: Extraversion revealed a positive link and neuroticism a negative link with intrinsic career success. As regards the subjects' current and desired occupation, a positive correlation was found for the extraversion dimension and a negative for the agreeableness dimension. This suggests that individuals consistently choose (work) situations that are compatible with their personality traits. Extroverted leaders thus tend to choose tasks or positions that enable them to live out their extroverted behaviour whereas agreeable leaders tend to shy away from taking on a job in which they would have to struggle hard, for example. Mueller & Plug (2006) investigated in a longitudinal study how the Big Five personality traits influences wages. The study revealed that men with low scores in the agreeableness dimension and high scores in the openness to experience and emotional stability dimensions earned more than others. In these results, openness to experience had the greatest positive influence on wages, while extraversion and conscientiousness had no influence for men. However, women achieved a wage premium if they had high scores in the conscientiousness and openness to experience dimensions.

2.2 Willingness to take risks

In personality psychology, Andresen (1995) and other researchers have doubted the exhaustiveness of the Big Five for describing personality and have discussed the willingness to take risks as a sixth basic dimension of personality. Lopes &

Berkowitz (1987) and Byrnes et al. (1999) distinguish among three categories into which theories to explain willingness to take risks can be classified:

- *Context-independent distinction* between risk-affine and risk-averse persons, i.e. differences in willingness to take risks should be independent of the situation. Accordingly, this approach claims that women are generally less willing to take risks than men and that leaders are generally more willing to take risks than non-leaders. Economic studies proceed on the assumption that there is a general willingness to take risks that influences behaviour in all areas of life (cf. Dohmen et al., 2005).

- *Persons-independent distinction* between risk-affine and risk-averse situations. This approach implies that depending on the situation, people are willing to take risks if the options are presented positively, which would result in no differences between persons.

- *Context-dependent distinction* between risk-affine and risk-averse persons. In this case there are differences in risk behaviour as a result of the different ways the context is perceived and assessed. According to this approach, women would also be more willing to take risks in situations in which success is more important for them than it is for men.

Littmann-Wernli & Schubert (2001) come to the conclusion in their comprehensive gender-comparative experiments that "a general stereotype in the sense that women are more risk-averse than men is not directly maintainable [...]. Therefore the 'framing' of information is of importance." (Littmann-Wernli & Schubert, 2001, p. 145). In context-related decision problems, their studies showed that there were no significant differences between men and women as far as willingness to take risks is concerned. In abstract game situations, however, women were more willing to take risks when it came to a losing game and more risk-averse when it came to a winning game. In addition, information about probabilities (of success) had different effects on the risk behaviour of women and men; if there was little or no information at hand, women were less willing than men to take risks. The numerous studies based on self-assessments of the willingness to take risks concluding that women have a greater aversion to risk do not take into account that (in accordance with Littmann-Wernli & Schubert, 2001) attitude differences are the result of differences in ambiguity aversion (aversion to uncertain situations) but not in risk aversion in the narrower sense of the term.

3 Hypotheses

Given the criticism of the trait theory outlined above, it would be extremely tenuous to argue that certain personality traits alone are crucial to whether a person is in a leadership position or that they even can advance a person's career to help them reach a higher position. Being a member of an elite group, for example, could play a far greater role. It is therefore justifiable to interpret the results in the form of a discriminant analysis: Are there significant differences between leaders and non-leaders in their (self-perceived) personality? If there are, how big are these differences and how are they related to differences in other characteristics?[5]

In this study, a comparison of the Big Five personality traits and the willingness to take risks for leaders and other employees in the private sector is therefore intended to indicate whether both groups differ significantly from each other in terms of their self-perceptions. A further objective is to establish differences between women and men and to explain whether these differences have a statistically significant influence on the different career opportunities of women and men. It is important to remember that conclusions as to which personality traits are ultimately aids or obstacles to a career can only be made to a limited extent because these traits cannot only be conditions for successful advancement but must also be requirements for the result of that advancement. In this context, career obstacles for women could be due to the fact that women do not comply as much with the male-dominated "leadership prototype" or alternatively – due to their self-perception and anticipated perceptions of others – seem to meet these expectations to a lesser degree than their male colleagues (cf. Gmür, 2006; von Rennenkampff, 2005).

This, in addition to the results shown in Section 2, leads to the following research questions:

- With regard to which personality traits do leaders significantly differ – in statistical terms – from employees who are not in leadership positions?
- To what extent are there differences between women and men?

We start by subjecting differences between leaders and other employees to bivariate analysis and shown the results in Section 5.1.

In a multivariate assessment, the questions are extended:

- With regard to which personality traits do leaders differ from employees who are not in a leadership position *when all personality traits and other explanatory variables are investigated at the same time?*

[5]This, however, leaves unanswered the question of the extent to which characteristics or personality self-perceptions change as a result of professional advancement.

- Are there personality differences between women and men that could explain the fact that men have greater career opportunities *when all personality traits and other explanatory variables are investigated at the same time?*

The multivariate model takes into account the personality dimensions of the Big Five construct and the willingness to take risks.

Based on the theoretical approaches of the trait theory of leadership and the empirical findings – shown in Section 2 – from other studies on the relationship between extrinsic career success and the five personality dimensions, it can be expected that leaders in the private sector in Germany rate themselves as more conscientious, more open to experience, more extroverted, less agreeable and less neurotic than employees who are not in a leadership position. The trait theory of leadership argues that these differences are not only significant in statistical terms but also relevant (or large in their effect size). This leads to the following hypothesis:

H1: Leaders are more conscientious, more open to experience, more extroverted, less agreeable and less neurotic (or more emotionally stable), and rate themselves both generally and in their professional career as more willing to take risks than employees who are not in a leadership position.

The scientific debate emphasizes that willingness to take risks is an important indicator for career decisions. In addition to the more comprehensive construct of general willingness to take risks, our study focuses in particular on willingness to take risks in one's own professional career, which is more strongly linked to professional advancement (cf. Dohmen et al., 2005). Willingness to take risks with regard to professional career, which was surveyed in the 2004 SOEP, has been integrated into this analysis.

If women are less willing to take risks than men, and if this self-perception regarding professional career does not concern willingness to take risks in the narrowest sense of the term but, as Littmann-Wernli & Schubert (2001) suspect, reflects ambiguity aversion, then differences between women and men should prove to exist: Women, in comparison to men, rate themselves as being more risk-averse (or regard their professional career as more risky). This would mean that women's chances of being in a leadership position are much lower due to their attitude towards risk. This leads to the following hypothesis:

H2: Women's chances of being in a leadership position are much lower because, owing to their uncertain chances of advancement, they are more risk-averse than men.

First of all, each dimension of the personality traits (Big Five and willingness to take risks) are presented as a deviation from the average of the adult population for all private-sector employees – separately for women and men in leadership positions or other employees.

In order to test the hypotheses, a multivariate logit model is used to calculate the likelihood of being in a leadership position (marginal effects). These marginal effects provide a basis for establishing which traits are characteristic of leaders on average. The calculation is made both for all employees as well as separately for men and women. In addition to personality traits, further characteristics of the employees are also included in the model. The aim is to establish those factors that are essential for professional success.

4 Database and method

The results of this study are based on the data of the Socio-Economic Panel (SOEP), 2007 release (1984-2006) (cf. Wagner et al., 2007). The SOEP is a representative longitudinal survey of more than 20,000 persons in about 12,000 private households in Germany. It has been carried out every year since 1984 with the same persons and families in the Federal Republic of Germany.

The sample has been amended several times. Partial sample G from 2002, for example, provided significant numbers of cases for high-income households.[6] The initial survey covered 1,224 households with 2,671 persons. The SOEP was supplemented in 2006 by subsample H, which is meant to stabilise the number of cases and serve as a form of "regeneration" (1,506 households with 2,616 persons).[7] In total in 2006, there is information available for more than 22,000 respondents.

On the basis of the SOEP data, analyses have been presented several times on the structure and remuneration of persons in specialist and leadership positions.[8] As the only representative set of individual data in Germany, the SOEP provides a platform for examining not only socio-demographic and economic features but also information concerning personality traits and social indicators for a sufficiently high number of cases.

The large number of definitions of leaders makes it difficult to compare the results of various studies, particularly over the course of time. "There are almost as many different definitions of leadership as there are persons who have attempted to define the concept" (Bass, 1990, p. 11). This statement from the Handbook of

[6] Households with a net monthly income of approx. €4,000 and above.

[7] The projection of the sample for the year 2006 was still provisional at the time it was drawn up.

[8] Cf., for example Busch & Holst (2009); Holst (2009); Holst & Schimeta (2009); Holst (2006); Holst et al. (2006). The results of these studies differ from the present study not only regarding the definition of the population of leaders but also due to changes/corrections in the projection. Our analyses are based on the subsamples A to H – all persons, including those with high incomes, and persons from subsample H (since 2006) were included. The weightings are based on projection factors that integrate all samples, including the first wave.

Leadership from the year 1990 still applies today. In addition, it is also possible to differentiate between the examination units[9] in the individual studies (cf., for example, Brader & Lewerenz, 2006; Kay, 2007).

In this study, leaders are defined on the basis of the respondents' own comments on their position in their occupation. The subjects of the study are employees above 18 years of age in the private sector. The year 2005 was chosen as the reference date because this was the year in which questions on the most important personality traits were asked. The target variable is the information on whether or not the respondent was in a leadership position in 2005.[10] Due to the lower proportion of women in high leadership positions, a somewhat broader definition of leaders was selected. It encompasses persons (starting at age 18) who stated in the SOEP that they worked as employees[11] in the private sector[12] in:

1. functions with extensive managerial duties (e.g. managing director, manager, head of a large firm or concern);

2. other managerial functions or highly qualified duties (e.g. scientist, attorney, head of department)

(cf. Figure 3 in the annex). The term "leaders" therefore encompasses both persons in leadership positions as well as highly-qualified specialists.

The surveying of personality dimensions in the SOEP in 2005 is based on the self-assessment of respondents on the basis of 15 adjectives used in colloquial language.[13] A factor analysis made it possible to extract from these 15 statements on

[9] E.g. companies or persons, if applicable defined according to region, function or sector etc.

[10] For those who had a leadership position in 2005 we do not take into account when they entered this position. If the person did not have a leadership position in 2005, we do not take into account whether he or she might have been in a leadership position before. Since the analysis at hand is a cross-section analysis, it is not taken into account either whether a person is going to change to a leadership position (i.e. be promoted) or we also do not take into account leave a leadership position (i.e. be demoted) in the future.

[11] Leaders amongst blue-collar workers (master craftsmen and foremen) were not included in the analysis. An independent analysis of this group is not possible, particularly amongst women, due to the low number of cases.

[12] Classification took place on the basis of the question "Does the organisation for which you work form part of the civil service?" "Yes" or "No".

[13] The question in the SOEP is: "Now a completely different subject: our every-day actions are influenced by our basic belief. There is very limited scientific knowledge available on this topic. Below are different qualities that a person can have. You will probably find that some apply to you perfectly and that some do not apply to you at all. With others, you may be somewhere in between. Please answer according to the following scale [...] I see myself as someone who..." The respondents were given 15 adjectives or statements to evaluate on a scale of 1: Does not apply to me at all to up to 7: Applies to me perfectly (cf. Figure 4 in the annex).

personality self-perception the five personality dimensions conscientiousness, extraversion, agreeableness, openness and neuroticism[14]: These are the main focus of this analysis. The aim is to investigate whether personality traits can explain differences in the career opportunities of women and men if a wide population and numerous career-relevant personal variables are taken into account.[15]

Willingness to take risks was added to the SOEP in 2004 and is also based on the respondents' self-assessment. Of the total of eight questions dealing with individual risk behaviour in general and in various situations in life (car driving, investments, leisure and sports etc.), this study investigates general willingness to take risks[16] and willingness to take risks with regard to one's own professional career[17].

As to personality traits, the aim of the multivariate analysis is to demonstrate the extent to which male and female leaders differ with regard to their self-perception both from each other and from those of the same sex who are not in a leadership position. This is examined by "monitoring" other individuals and sociostructural criteria such as scope of education, working environment (segregation), social background and family situation. One purpose of taking these criteria into account is to show how strongly – in comparison to the personality traits – these criteria are linked to professional position. The other purpose is to consider the differences between women and men as regards the scores achieved in these criteria (in particular segregation and professional experience).

The human capital theory – the main approach for explaining wage differencials – ought to also provide explanations for professional career. Underlying this theory is the idea that differences in human capital also explain differences in performance and labour productivity and thus influence professional position (cf. Becker, 1993). Accordingly, (high-)school education as well as professional qual-

[14]In 2005, in the style of the Big Five approach, a brief scale (BFI-S) was used for the first time in the main SOEP survey. The development of this brief scale (three questions were asked on a scale of 1 to 7 for each personality dimension) was preceded by a pretest in the year 2004. Regarding validity and reliability, the results revealed satisfactory results (cf. Gerlitz & Schupp, 2005). The five dimensions were formed using factor analysis of the 15 individual items.

[15]All dimensions underwent a standardisation process on a mean value of 50 and a standard deviation of 10 (cf. Nübling et al., 2006). The deviations shown are therefore the difference between the mean values of the formed personality traits of individual subpopulations and those of the overall population – i.e. including all employed and unemployed persons from the age of 18.

[16]The question in the SOEP is: "How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" To be answered by the respondents using a scale ranging from 0: risk averse to 10: fully prepared to take risks (cf. Figure 5 in the annex).

[17]The question in the SOEP is: "People can behave differently in different situations. How would you rate your willingness to take risks in the following areas? – in your occupation?" To be answered by the respondents using a scale ranging from 0: risk averse to 10: fully prepared to take risks (cf. Figure 5 in the annex).

ifications and experiences have a positive effect on both professional position and remuneration. According to this theory, the low number of women on executive levels would be the result of different human capital configurations and different estimations of educational investments.

The following *human capital* variables are included in the model: duration of education, duration of work experience, squared duration of work experience[18], duration of job tenure – all measured in years. In addition, working hours arrangements and any overtime deviating from these arrangements are taken into account by means of contracted working hours (more/less than 35 hours per week) and the number of overtime hours worked during the previous week. It is presumed that a high time commitment to one's occupation is significantly more important to leaders than it is to other employees who are not in leadership positions.[19]

Becker (1991) assumes that maximisation of benefit in the household is achieved if both partners have specialised in (paid) employment and (unpaid) house and family work. Accordingly, the person with the greatest comparative advantages in gainful employment would spend a higher number of hours in gainful employment. The scope of gainful employment then determines how household duties are shared. In reverse order, this also means that someone who spends a lot of time with the family and the household should have less time for career. As a rule – regardless of gender – housework restricts time sovereignty. Traditionally, however, responsibility for housework is ascribed to women. Origin can also play an important role in the performance of a leadership function. Children from better educated households are therefore likely to have greater career opportunities than those coming from less educated households (cf. Schneider, 2004, 2008).

For this reason, the model includes various aspects of *social structure* and the *living environment* in addition to the human capital variables: The variables marital status (married, living together: yes/no), number of children under 16 years of age in the household, amount of time spent on housework in one working day (none/at least one hour) should take into account effects of individual life situations and the (traditional) role distribution in the household. Furthermore, the model includes Eastern Germany as a region (yes/no) as a variable in order to take into account the still-existing differences between the two parts of Germany as regards opportunities to assume a leadership position.

The labour market is segregated according to gender, i.e. there are differences

[18]The expected effect of professional experience squared is negative because this variable must be interpreted in connection with the linear dimension. Professional experience squared takes into account the diminishing marginal utility of professional experience in relation to the dependent variable.

[19]In a longitudinal study for Germany, Pannenberg (2002) examined the connection between unpaid overtime and actual earnings in Germany and reached the conclusion that overtime in the long term goes hand in hand with an increase in actual earnings.

between the sexes when it comes to their hierarchical positioning (vertical segregation) and their dominance in individual economic sectors and occupational areas (horizontal segregation). As a result, typical female occupations are characterised by lower chances of promotion than is the case in typical male occupations (cf. Busch & Holst, 2009). In addition, large companies have an internal labour market, which makes the chances of promotion better than in small and very small companies. It is a well-known fact that women mainly find employment in the service sector (including health and welfare), whereas men are over-represented in the manufacturing trade (cf. Busch & Holst, 2009; Holst, 2009). It can consequently be assumed that women and men have differing chances of promotion in the respective branches. Higher chances of promotion can be expected in areas where the employment share is also higher.

The logit assessment for segregation on the labour market includes the following variables: economic sector (manufacturing trade, commerce, hotel and restaurant industry, transport), company size (under 20, 20 to under 200, 200 to under 2000, more than 2000 employees), and the proportion of women in the occupation. Social background is reflected by the father's school education (advanced technical college entrance qualification/university-entrance diploma, less than advanced technical college entrance qualification/no comment).[20] In addition, checks are carried out to establish special features in the sample in the SOEP (high income sample G).

The statistical model is based on a logit analysis (cf. Greene, 1997), i.e. the statistical likelihood of being in a leadership position is estimated by means of various influencing factors.[21]

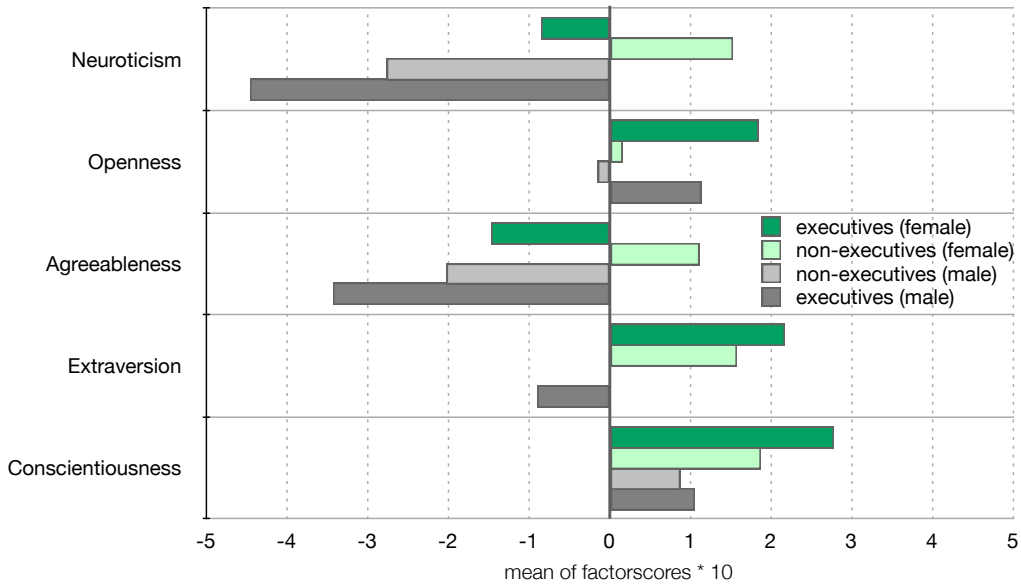
5 Results

5.1 Descriptive results

An examination of the individual personality traits alone initially reveals that employees from the private sector differ from the mean of the population in most of the dimensions of the Big-Five construct (Figure 1). Their statements often reveal lower neuroticism values – i.e. higher emotional stability – and agreeableness and higher values in the openness, extraversion and conscientiousness dimensions. These traits are more pronounced in leaders: In our study, leaders are characterised as emotionally more stable, more open, more conscientious and

[20] Alternatively, the mother's education was taken into account; this, however, had no significant influence.

[21] The cross-sectional analysis does not enable any cause-effect statements to be made. For this purpose, a time-span-related analysis is necessary.



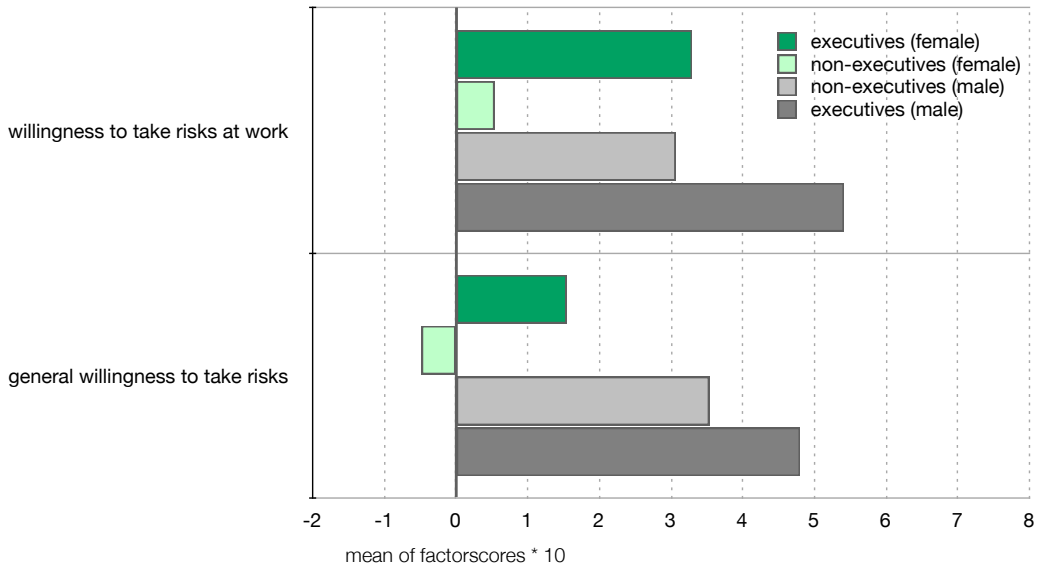
Source: SOEP, calculations by DIW Berlin.

Figure 1: Leaders and other employees in the private sector according to gender and the Big Five (deviation from the overall mean of all adult persons in Germany) 2005

less agreeable than non-leaders. The extraversion dimension, however, seems to play a different role for women and men in leadership positions: Women specify higher values in comparison to the other employees whereas men specify lower values. As a general rule, the greatest differences between the sexes are found in the neuroticism and agreeability dimensions.

Openness to experience seems to be a particularly important personality trait in leaders: Mueller & Plug (2006), for example, revealed in a longitudinal study that – in comparison to the other four dimensions of the Big-Five construct – these dimensions have the greatest positive influence on income. Women reveal higher values than men in this dimension. On the whole, women also seem more extroverted and more conscientious than men. Men, on the other hand, consider themselves to be more emotionally stable and less agreeable than women. As a result, female leaders score high in three of the five traits in which leaders differ from non-leaders, whereas men score high in two of them.

In addition to the Big Five personality traits, differences in willingness to take risks also exist between leaders and non-leaders and between women and men. As far as willingness to take risks at work and general willingness to take risks are concerned, employees are, on average, more willing to take risks than the population mean, whereas leaders are more willing to take risks than other employees



Source: SOEP, calculations by DIW Berlin.

Figure 2: Leaders and other employees in the private sector according to gender and willingness to take risks (deviation from the overall average of all adult persons in Germany) 2004

in the private sector (Figure 2). On average, men give generally higher values for willingness to take risks than women. Female leaders, however, are on a par with non-leader male employees when it comes to willingness to take risks at work.

Both with regard to the Big Five and willingness to take risks dimensions, it becomes evident that women in leadership positions differ more significantly from their female colleagues who are not in a leadership position than is the case with men. Initially, this result could be interpreted as evidence of the strong pressure to adapt that faces women who want to be successful in the "male-dominated world".

5.2 Multivariate analyses – career and personality

The following deals with a multivariate logit assessment that covers the personality traits as well as other characteristics of employees. The aim is to establish factors that are fundamental to professional success – i.e. to the likelihood of being in a leadership position. The dimensions taken into account are those specified in Section 4 concerning human capital investments, social structure and living environment. In addition, the influence of gender-specific segregation on the labour market in Germany is also assessed (Model 1). Subsequently, this assessment is carried out separately for women and men in order to determine the significance of the individual influence dimensions for professional success (Models 1a and

1b) within these subpopulations. A concluding analysis that takes into account interaction variables is designed to show potential gender differences in the effect size of the personality indicators (Model 2).

Table 3 shows the marginal effects of being selected to a leadership position for employees in the German private sector. In Model 1, gender is only incorporated as dummy (woman = 1, man = 0). The marginal effects enable us to establish which traits are characteristic of leaders on average, taking into account that the gender of the leaders can vary. Marginal effects reflect the impact on the dependent variable and enable us to make a direct comparison between the magnitudes of impact for the variables – in each case within the metric and categorical variables. In this logit analysis, the marginal effect of a metric variable corresponds to the change in the probability of being in a leadership position if this variable increases certeris paribus by one unit. The probability of being in a leadership position increases, for example, by 1.0 percentage points if a person has 1 year more professional experience than the average of all employees. For categorical variables (e.g. housework during a working day), the marginal effect is the change of probability of being in a leadership position in comparison with the reference group. In this case, the probability of being in a leadership position decreases by 5.1 percentage points for those who do at least one hour of housework on a working day compared to those who do not.

Personality traits

Model 1 confirms the previous results for the personality traits neuroticism, openness and conscientiousness: The probability of being in a leadership position is greater for employees who are emotionally more stable (or less neurotic), more open to experience and more conscientious, whereby the influence of the latter dimensions is the most prominent. In comparison to the other (control) variables, however, they tend to be low (Table 3). On the contrary, the most prominent dimension is willingness to take risks at one's career[22], for which – while controlling for other characteristic – leaders are more willing to take risks in their professional career than non-leaders. In statistical terms, the probability of being in a leadership position increases ceteris paribus by 4.6 percentage points when a person evaluates him or herself as one unit[23] more willing to take risks than the average

[22]The model was also expanded to include general willingness to take risks. This, however, resulted in no additional explanation content and did not reveal any significant effects for women or men. In addition, there is a greater connection with willingness to take risks in professional career.

[23]One "unit" corresponds in this variable (as with the Big Five, because the variables were standardised or transformed) to a standard deviation. If a person deviates with regard to this variable by one standard deviation from the mean value, this difference must be evaluated as very

	Marginal effects						Significant differences
	All		**Women**		**Men**		
	Model 1		Model 1a		Model 1b		Model 2
Personality							
"Big Five"							
Neuroticism	-0.018	**	-0.005		-0.029	*	
Openness	0.030	***	0.012	***	0.033	*	
Agreeableness	-0.014		-0.006		-0.018		
Extraversion	-0.002		0.003		-0.013		
Consciousness	0.023	**	0.011	*	0.026		
Willingness to take risk (job career)	0.046	***	0.017	***	0.065	***	
Monitored for further explanatory variables:							
Woman *(Reference: man)*	-0.103	***					
Human capital							
Duration of education (in years)	0.070	***	0.022	***	0.106	***	
Duration of work experience (in years)	0.010	***	0.005	***	0.005		+*
Duration of work experience^2	-0.000	*	-0.000	*	-0.000		
Duration of job tenure (in years)	0.002		0.001	*	0.001		
Contracted working hours *(reference: part-time)*							
More than 35 hours per week (full-time)	0.155	***	0.042	***	0.268	***	
Amount of overtime (previous week)	0.015	***	0.006	***	0.021	***	
no answer regarding overtime	0.071		0.024		0.106		

* significant at 10%; ** significant at 5%; *** significant at 1%

+ the effect is significantly higher for women than for men

- the effect is significantly lower for women than for men

Dependent variable: person in leadership position (yes/no); conrolled for sample G.

	Marginal effects						Significant differences
	All		**Women**		**Men**		
	Model 1		Model 1a		Model 1b		Model 2
Social structure/Life environment							
Father's school education *(reference: less than advanced technical college entrance qualification/university-entrance diploma)*							
Advanced technical college entrance qualification/university-entrance diploma	0.054	**	0.015		0.088	*	
Don't know/no entry	0.011		0.032	**	-0.068		+**
Marital status *(reference: married, living apart/not married)*							
Married, living together	0.027		0.010		0044		
Number of children under 16 years of age in the household	0.026	**	0.008		0.052	***	
Housework during a working day *(reference: zero hours)*							
At least one hour	-0.051	***	-0.025	*	-0.076	**	
Place of residence *(reference: former federal states)*							
New federal states	-0.037	*	-0.014		-0.046		
Segregation							
Economic sector *(reference: manufacturing trade)*							
Trade, hotel and restaurant industry, transport	-0.010		0.013		-0.068		+*
Other services	0.048	**	0.030	***	0.030		+*
Company size *(reference: fewer than 20 employees)*							
20 to up to 200 employees	0.022		0.008		0.022		
200 to up to 2000 employees	0.032		0.007		0.035		
2000 and more employees	0.029		0.008		0.029		
Proportion of women in the profession	-0.003	***	-0.001	***	-0.004	***	-*
Constants	-1.271	***	-0.434	***	-1.833	***	
Number of cases	3,492		1,913		1,579		
log Likelihood	-1,236.0		-475.8		-741.1		
LR	886.2	***	160.1	***	410.1	***	
Pseudo R^2	0.4355		0.3552		0.3178		

* significant at 10%; ** significant at 5%; *** significant at 1%
+ the effect is significantly higher for women than for men
- the effect is significantly lower for women than for men
Dependent variable: person in leadership position (yes/no); conrolled for sample G.
Source: SOEP, all employees in the private sector in 2005 (calculations by the DIW Berlin).

Table 3: Employees in the private sector: Determinants of selection to a leadership position, 2005

of all employers in the private sector. This makes the effect relatively high. As far as conscientiousness and openness is concerned, an equivalent change is only half of this amount (2.3 or 3.0 percentage points). The results therefore confirm the findings from other studies, which showed that the relationship between the Big Five personality traits and leadership tends to be low in magnitude. In contrast to other studies, no statistically significant effect can be proven for the extraversion dimension. The agreeableness dimension does not seem to have an independent influence on career chances either.

This model was also assessed separately for women and men (Models 1a and 1b). Women can increase their probability of being in a leadership position through more openness and conscientiousness (weak significance); for men, openness (statistically weak significance) and emotional stability (lower neuroticism value) play a role. For both sexes, willingness to take risks in one's career has the biggest effect.

It was also examined whether women in leadership positions differ more in these traits from members of their own sex who are not in a leadership position than is the case among men. The significant differences between women and men in this extended model are indicated in the last column with (+) and (-) (Model 2). It is apparent that the chances women and men have of being in a leadership position do not differ significantly in statistical terms as regards the personality traits if both have had the same education and professional experience, have a similar social background and family situation, and are in the same sector, in a similar job and have identical working hours. The low proportion of women in leadership positions therefore cannot be explained sufficiently on the basis of the different personality assessments.

Control variables

As far as the connection between professional status and human capital is concerned, the most profound effect on the whole proves to be with duration of education: One year more of education compared to the average duration of education of all employees in the private sector in Germany increases the probability of being in a leadership position by 7.0 percentage points. It is a known fact that school/academic success is also linked to personality: the conscientiousness and openness to experience dimensions interact strongly with duration of training (cf. Borghans et al., 2008) and with study-related achievements (cf. Trapmann et al., 2007). It is even more astonishing that both duration of eduaction as well as these two personality dimensions also have independent explanatory power in our model. General and specific (in-house) professional experience, however, only

prominent.

plays a role for women, and this difference from men is also significant in statistical terms. In other words, while female leaders have much more professional experience than their female colleagues who are not in a leadership position, this difference is not statistically evident for men.

Family situation and social background also play a role in professional career but sometimes differ between the sexes: While the father's education (advanced technical college entrance qualification/university-entrance diploma) increases professional chances for men, this does not seem to play a role for women.[24] However, these different effects between women and men do not seem statistically significant in extended Model 2. The fact that social background is decisive for the individual's educational and professional career has been empirically proven for Germany by Becker & Hecken (2008). It has also been empirically proven that willingness to take risks is also determined by or 'inherited' from the parents. However, no differences were established between women and men or girls and boys (cf. Dohmen et al., 2006). It is a known fact that housework restricts time sovereignty. Its negative effects on the career of both sexes becomes clear in this case as well. The probability of being in a leadership position decreases by a total of 5.1 percentage points if at least one hour of housework is done in one working day. In other words, female and male leaders tend to avoid housework. An astonishing factor in this respect is that this effect is not covered alone by considering the agreed working hours and amount of overtime worked but has its own explanatory capacity. That is to say, a leader with the same agreed working hours who works an equal amount of overtime tends not to do any housework, whereas a non-leader does.

The segregation indicators reveal highly significant differences between women and men with regard to the probability of being in a leadership position. One factor that has a clear influence on the career chances of women and men is the choice of profession. The more female-typical an occupation, the less likely the chances of assuming a leadership position. This effect is even more pronounced for women than it is for men. In comparison to the manufacturing trade, women have particularly good career chances in the service sector. For men, there was no evidence of the economic sector having an influence on career. Similar results are also revealed in other studies (cf. for example, Brader & Lewerenz,

[24] It must be taken into account that personality traits can on the one hand be determined by social background (cf. inter alia Dohmen et al., 2006) – in the model, this is taken into account on the basis of the father's education. On the other hand, personality is also reflected in objective indicators (human capital, overtime, segregation) in which women and men sometimes differ from each other more distinctly. This is also confirmed by Dohmen & Falk (2006) in experimental studies on the effect of personality traits on self-selection of various remuneration systems: "[...] we find that personality matters for the sorting decision and it matters in different ways for men and women". (Dohmen & Falk, 2006, p. 30).

2006). In contrast to the assumptions made in Section 4, the size of the company has no significant influence in women or men on whether a leadership position is assumed or not.[25]

Limitations

Fundamentally, the evaluation of the results concerning personality indicators must take the following into account: The information used to ascertain the Big Five and willingness to take risks as personality traits is given by the respondents about themselves, which does not necessarily reflect their true behaviour. It is to be assumed that respondents' true behavioural patterns deviate from their statements, both due to the fact that the self-perceptions differ from individual to individual and also due to social role behaviour. Nonetheless it can be assumed that there is a strong link between the information provided by the respondents about themselves and their actual behaviour. As far as willingness to take risks is concerned, Dohmen et al. (2005) have shown this clearly.

What is more, the data at hand reveal that the same person may change (sometimes several times) between the status of "leadership position" and "other employees". The snapshot view for the year 2005 (or 2004 as far as willingness to take risks is concerned) falls short of reflecting this reality.[26] In addition, this cross-section study does not reveal whether the persons concerned have become leaders because they show a high level of these characteristics or whether these characteristics are more prominent as a result of their leadership task.[27] For this purpose, longitudinal analyses are necessary that repeatedly measure personality traits during the course of life. In principle, the SOEP also makes it possible to conduct longitudinal analyses. The Big Five personality traits have so far only

[25] The studies based on the IAB company panel and the Hoppenstedt (2008) company database reveal that the female proportion of leadership positions in the private sector in Germany is lower in larger companies. The fact that this study does not confirm this result can be explained on the one hand by the different delineation (only employees) and definition of leaders. On the other hand, this effect can be explained by the coinciding control of the economic sector and female proportion in the profession. In other words, larger companies of the population under examination tend to belong to the manufacturing trade, and the proportion of working women is higher in smaller companies.

[26] It is therefore possible that persons who were in leadership positions at the time of the observation leave the leadership level in the ensuing years, either temporarily or for good. Conversely, persons who rank among "other employees" during the observation can have been a leader before or might advance to a leadership position in future. In other words, the personality differences between leaders and non-leaders might be greater than is empirically verifiable.

[27] If, as is often assumed, the personality traits are not so stable over time, then the differences shown might be overestimated with regard to the question as to which characteristics are beneficial for career.

been measured once – in 2005. There are plans, however, to include these variables again in the questionnaire.

As far as gender is concerned, the trait theory of leadership is linked to the assumption that women and men differ in terms of significant personality traits. In this context it must be taken into account that personality traits are often attributed to women and men in dual form (e.g. rational/emotional, hard/soft). At the same time, an evaluation is carried out of the traits, but they are not located neutrally next to each other with an equivalent value but are arranged hierarchically; the traits that are considered to be masculine are usually rated as being more significant (e.g. rational comes above emotional) (Keller, 1985; Nelson, 1996). Against this background, it can be assumed – particularly at the male-dominated leadership levels – that women have fewer chances of reaching a leadership position on account of the traits that actually exist in them or have been attributed to them and are regarded as feminine. However, the self-reported perception of personality traits analysed here only reflects this dynamism to a very limited extent.

In the final analysis, the assumption of a leadership position is a result of the interplay between one's own career goals and the overcoming of obstacles to take this professional path. One's own preferences for or against a career that aims at reaching the "executive level" are usually linked with personality to the same extent as "adaptability" to required leadership traits. It is not possible with this analysis to separate self- and external selection effects from each other. This requires a precise (retrospective) definition of career goals and career obstacles.[28]

When considering which personality differences this analysis reveals between leaders and non-leaders, it must be borne in mind that we are dealing with a snapshot of the achieved professional status, which results from both self- and external selection processes, and with self-perceptions of personality traits that might be reinforced or weakened by the particular professional situation.

6 Conclusion

The aim of our study was to compare the self-evaluation of personality traits (Big Five and willingness to take risks) of leaders and other employees in the private sector in Germany and to determine the extent to which women and men differ. The study also aimed at clarifying whether, due to other characteristics, the personality traits concerned had a statistically significant influence on the different career opportunities of women and men.

[28] In most cases, this is not possible in a quantitative survey. Qualitative studies are more suitable for this purpose. A study carried out by the APEC (2007) revealed that women in leadership positions try in various ways to establish a balance between individual aspirations and external obstacles.

A descriptive analysis of personality self-evaluations revealed that in most of the personality dimensions, leaders differ from employees who are not in a leadership position. In our study, leaders are emotionally more stable, more open to new experiences, more conscientious and less agreeable than other employees. Differences also become evident when looking separately at women and men. Generally, women rate themselves as more open, more extroverted and more conscientious than men. Men, on the other hand, give higher values for willingness to take risks and emotional stability and lower values for agreeableness. With regard to some personality traits, women in leadership positions differ far more significantly from other women who have no leadership function than is the case with men. This suggests that women are under pressure to adapt to the male-dominated leadership world.

If the influence of personality traits is examined in consideration of further factors such as human capital endowment, segregation on the labour market, social background and individual living environment, the differences between the sexes as explanatory factors for professional success assume a less important role. Although the conscientiousness, openness to experience, emotional stability (or neuroticism) and willingness to take risks dimensions still have a certain explanatory capacity for professional success, they cannot explain the differences between the sexes to a large extent. Differences between women and men in their self-perception of personality traits therefore cannot be used to explain the gender gap in career chances.

The first hypothesis (H1) proposed in Section 3 can be partly rejected: With respect to the personality dimensions extraversion and agreeableness, persons in managerial positions do not differ significantly in their self-perceptions from employess not in such positions. But we do find evidence that leaders are more conscientious, more open to experience and less neurotic, and rate themselves as more willing to take risks in their professional career than non-leaders do. The second hypothesis (H2) claimed that the chances of being in a leadership position are significantly lower for women because they are more risk-averse than men can be rejected. Although the results reveal that willingness to take risks has a clear influence on the probability of being in a leadership position, no significant difference in the impact was found in this case for women and men.

However, it is not possible to conclude from this that women do not have to accept any disadvantage due to their actual or attributed characteristics. Kay (2007), for example, comes to the conclusion that the sex of the person who makes a selection decision is of major significance. In addition, stereotypes of traits and abilities attributed to women do not correspond to those viewed by (male) leaders as absolutely essential for advancing to a leadership position (cf. German Consulting Group, 2005). Many studies have revealed that personality traits that are regarded as male and female are not treated equally by society but are usually

hierarchically arranged, and that traits that have male connotations are viewed as higher-ranking (e.g. rational/male is higher-ranking than emotional/female) (e.g. Keller, 1985; Nelson, 1996). As prejudices, they can also unintentionally influence decisions concerning employment and promotion – to the *dis*advantage of women. This connection can be interpreted as an indication that it is not only a matter of who has leadership traits and to what extent but also to whom leadership traits are attributed or to whom they are denied. In addition, men – in contrast to women – have numerous models to follow on all leadership levels. Women need more women in leadership positions in order to counter this disadvantage.

Significant conclusions for research and practice can be derived from the findings on the connection among personality, gender and career. For practical leadership research, it was proven that it is not gender differences in personality self-perceptions but professional experience, social background and segregation on the labour market that are decisive for the different chances women and men have of assuming a leadership position. A one-sided focus on leadership characteristics to explain gender-specific differences between women and men in professional career is misleading.

Stereotypical attributions of abilities and traits can damage businesses and other organisations. A considerable amount of research still needs to be done concerning the losses resulting from this. Top leaders in particular are often recruited from their own ranks. For the most part, no research has been carried out in quantitative analyses on the influence of network effects on the different career chances of women and men. To support gender-neutral conditions in companies, intensive training courses for decision makers and targeted incentive systems can contribute towards achieving higher female proportions in the leadership sector.

From the perspective of equal opportunities for men and women, this study provides clear politically conclusions: more decisive than personality traits for increasing the career chances of women are interruptions in employment (e.g. by extending childcare options) and a fight against segregation on the labour market. The right combination of conditions in the social, political and economic environment can contribute towards equal opportunities, allowing both women and men to actually be able to make these important professional investments.

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Annex

43. What is your current occupational status?

☞ *If you are employed in more than one position, please answer the following questions for your **main** position only.*

Blue-collar worker:

- Untrained worker ☐
- Trained worker ("angelernt") ☐
- Trained and employed as skilled worker ☐
- Foreman ("Vorarbeiter") ☐
- Master craftsman ("Meister") ☐

Self-employed (including family members working for the self-employed)

	Number of employees		
	None	**1 – 9**	**10 and more**
Self-employed farmer	☐	☐	☐
Free-lance professional, independent scholar	☐	☐	☐
Other self-employed	☐	☐	☐

- Family member working for self-employed relative ☐

Apprentices / trainees and interns:

- Apprentice / trainee in industry of technology ☐
- Apprentice / trainee in trade and commerce ☐
- Volunteer, intern, etc. ☐

White-collar worker:

- Industry and works foreman in a salaried position ☐
- Employee with simple duties, without training/education certificate ☐
- Employee with simple duties, with training/education certificate ☐
- Employee with qualified duties (e.g. executive officer, bookkeeper, technical draftsman) ☐
- Employee with highly qualified duties or managerial function (e.g. scientist, attorney, head of department) ☐
- Employee with extensive managerial duties (e.g. managing director, manager, head of a large firm or concern) ☐

Civil servant (including judges and professional soldiers)

- Lower level ☐
- Middle level ☐
- Upper level ☐
- Executive level ☐

1 3

Figure 3: Question complex, professional status in the SOEP

What kind of personality do you have?

125. Now a completely different subject: our every-day actions are influenced by our basic belief. There is very limited scientific knowledge available on this topic.

Below are different qualities that a person can have.
You will probably find that some apply to you perfectly and that some do not apply to you at all.
With others, you may be somewhere in between.

☞ *Please answer according to the following scale:*
1** means **"does not apply to me at all",
7** means **"applies to me perfectly".
With values between 1 and 7, you can express where you lie between these two extremes..

I see myself as someone who ...	**Does not apply to me at all** 1	2	3	4	5	6	**Applies to me perfectly** 7
– does a thorough job							
– is communicative, talkative							
– is sometimes somewhat rude to others							
– is original, comes up with new ideas							
– worries a lot							
– has a forgiving nature							
– tends to be lazy							
– is outgoing, sociable							
– values artistic experiences							
– gets nervous easily							
– does things effectively and efficiently							
– is reserved							
– is considerate and kind to others							
– has an active imagination							
– is relaxed, handles stress well							

Figure 4: Question complex, "Big Five" personality traits (excerpt from the SOEP survey 2005)

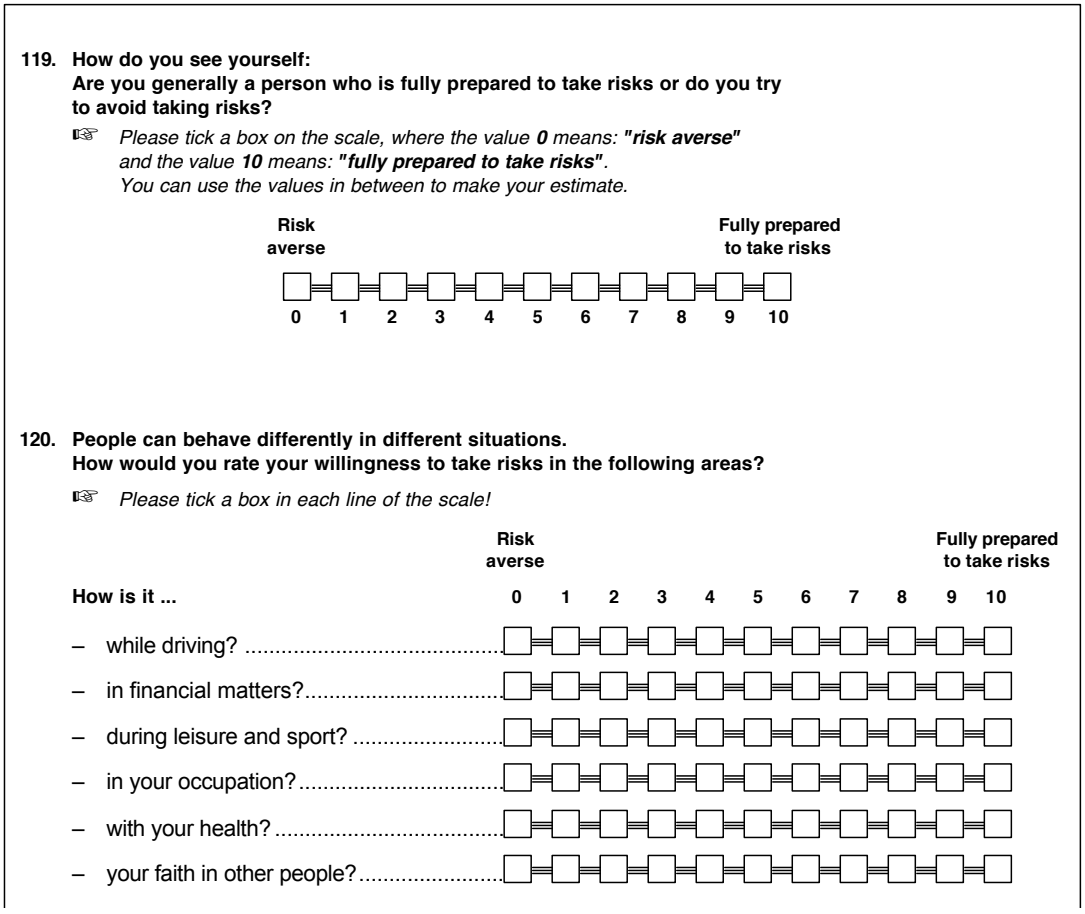

Figure 5: Question complex, willingness to take risk (excerpt from the SOEP questionnaire 2004)