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**Up to the Top or Stuck in the Middle: Does Gender Influence  
How Far Machiavellian Personalities Climb the Corporate Ladder?**

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**Abstract:** Concerns about corporate scandals and abusive leadership suggest that individuals with an opportunistic and manipulative personality sort into managerial positions. Indeed, a fledgling number of econometric studies have shown that individuals high in Machiavellianism are more likely to hold a management position. Our study takes that research an important step further by analyzing the moderating role of gender. It examines whether gender has an influence on how far Machiavellians climb the managerial hierarchy. Using representative data from Germany, we find that Machiavellianism increases the likelihood of holding a middle management position for both men and women. However, Machiavellianism is associated with a higher likelihood of occupying a top-level management position only among men but not among women. For men, the impact of Machiavellianism even appears to increase the further they climb the managerial hierarchy. These findings fit theoretical considerations.

**Keywords:** Machiavellianism, Gender Career Gap, Women, Top-Level Managers, Managerial Hierarchy.

**JEL:** D90, J16, M12, M51.

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## **1. Introduction**

Concerns about managerial misconduct loom high. Corporate scandals, excessive bonus cultures, wage theft, and destructive leadership cast serious doubt that managers voluntarily take social responsibilities or even just promote the interests of shareholders.<sup>1</sup> Indeed, econometric studies by Lindely (2018) and Baktash and Jirjahn (2026) provide evidence that opportunistic individuals sort into management positions. These studies show that individuals scoring high on Machiavellianism are more likely to hold a managerial position. Machiavellianism is one dimension of personality (Christie and Geis 1970). Individuals high in Machiavellianism have a strong desire for money and status, are willing to put morality aside, use manipulative tactics, and strategically look for situations to exploit others for selfish gain.

Our study takes an important further step to analyze the role of Machiavellianism in occupying a management position. It examines the question of whether gender has an influence on how far Machiavellians climb the managerial hierarchy. This question is of high interest as women are still underrepresented in management positions in many countries (Eagly and Carli 2016). Using representative data from Germany, we find that Machiavellianism increases the likelihood of holding a middle management position for both men and women. However, Machiavellianism is associated with a higher likelihood of occupying a top-level management position only among men but not among women. This pattern of results holds in regressions controlling for other personality traits (narcissism, psychopathy, Big Five) and a set of socio-demographic characteristics. It persists in a series of crucial robustness checks. As we will make clear, our results fit theoretical considerations.

Our study makes several contributions to the literature. First, it contributes to the econometric literature on gender and promotions (Baert et al. 2016; Benson et al. 2026; Blau and DeVaro 2007; Booth et al. 2003; Cobb-Clark 2001; Frederiksen and Kato 2018; McCue 1996; Smith et al. 2013). To the best of our knowledge, our study is the first to analyze the role of Machiavellianism in the gender career gap.

Second, for the past two decades or so, economists have been increasingly interested in personality traits. A growing body of econometric research showed that personality plays an important role in the labor market outcomes and well-being of individuals (Alderotti et al. 2023; Almlund et al. 2011; Borghans et al. 2008; Bowles et al. 2001; Jirjahn and Ottenbacher 2023). However, the studies overwhelmingly focused on the Big Five personality traits. This also holds for the literature examining the role of personality in the gender wage gap (Roethlisberger et al. 2023) and for the few studies analyzing the role of personality in the gender career gap (Aabo et al. 2024; Fietze et al. 2011; Wille et al. 2018). As emphasized by Ferguson et al. (2020: p. 484), economists should increase the explanatory power of their analyses by considering malevolent personality traits that are related to the immorality of human behavior. Our study shows that accounting for what psychologists call the dark side of personality (Paulhus and Williams 2002) indeed yields deeper insights into labor market outcomes.

Third, recent empirical studies in personnel economics have shown increasing interest in the role of managers' ability and leadership skills in the performance of firms (Benson and Shaw 2025; Hoffman and Stanton 2025; Roberts and Shaw 2022). Our study suggests that not only leadership skills but also malevolent personality traits of managers drive hierarchical processes within organizations. We can only obtain a deeper

understanding of what is going on in organizations if we take managers' malevolent personality traits into account.

## **2. Background Discussion**

In what follows, we set the stage by providing a brief introduction to the personality trait of Machiavellianism. We proceed with a theoretical discussion of the transmission channels that enable Machiavellians to make their way into managerial positions. Finally, we discuss the factors that drive the moderating role of gender in the link between Machiavellianism and occupational status.

### *2.1 The Personality Trait of Machiavellianism*

Machiavellianism is a dimension of personality introduced by Christie and Geis (1970). Their research was inspired by Niccolò Machiavelli's (1950/1532) book *The Prince*, a 16<sup>th</sup>-century treatise on how princes and royals can seize and retain political power. Christie and Geis observed stable differences between individuals agreeing and individuals disagreeing with Machiavelli's idea that successful leaders are strategic, tactical, cold, pragmatic, sly, cunning, manipulative and, at times, immoral. Since then, Machiavellianism as a personality trait has received considerable attention in psychology (Bereczkei 2015, 2017; Jones 2016; Jones and Mueller 2022; Jones and Paulhus 2009; Rauthmann and Will 2011).

Individuals high on Machiavellianism tend to view people as objects or means. They have a cynical view of human nature seeing others as weak, untrustworthy, and vicious. Machiavellians are self-interested and lack concern for others. They show cold instrumentality in pursuing goals such as money, power and status. Machiavellians exhibit disregard for conventional morality. While they are willing to exploit others for selfish

gain, Machiavellians are adaptable and put morality aside only in favorable situations in which expected rewards for breaking the norms outweigh the risks. Machiavellians have a high intention and ability to use manipulative tactics. They leverage a broad repertoire of tactics to get what they want, such as alliance building, exchange for favor, flattery, ingratiation, supplication, self-disclosure, impression management, deceit, lying, cheating, betrayal, intimidation, and sabotage (Baughman et al. 2014; Dahling et al. 2012; Forsyth et al. 2021; Jonason et al. 2012; Kish-Gephart et al. 2010). Machiavellians use their tactics in a cautious and deliberate way to reduce the risk that their opportunistic behavior is detected. They are flexible and show high adaptability to the respective social environment. Machiavellians constantly evaluate the social situation and monitor the moves of other people. This is a basic requirement for strategic planning and careful preparation of manipulative tactics. It allows finding opportunities for exploitative gain.

Machiavellianism is a personality trait that comes close to the concept of *homo economicus* – the behavioral concept that underlies traditional models in economics (Sakalaki et al. 2007). The concept of *homo economicus* assumes that individuals are rational pursuers of self-interest (Kirchgässner 2008; Schlicht 2020). They are willing to exploit situations and other people if it yields a material gain. The *homo economicus* has been increasingly challenged by behavioral economics during the past decades. Experimental research in behavioral economics suggests that people have social preferences (Bowles and Polania-Reyes 2012), care about fairness and reciprocity (Fehr and Schmidt 2006), and even exhibit preferences for truth telling (Abeler et al. 2019). The personality trait of Machiavellianism shows that a careful rehabilitation of the *homo economicus* is required (Baktash and Jirjahn 2026). This dimension of personality puts the

spotlight on individual differences in opportunistic inclinations. Not everybody behaves opportunistically. However, those who are high in Machiavellianism show behavioral tendencies that are closely related to the concept of *homo economicus*. In what follows, we make it clear that this is particularly relevant when it comes to analyzing managerial processes within firms.

## *2.2 Machiavellianism and Occupying a Managerial Position*

Econometric evidence on the link between Machiavellianism and occupational status is scarce.<sup>2</sup> Nonetheless, the few available econometric studies show a clear pattern. Lindely (2018) provides large-scale evidence from the UK that individuals scoring high on Machiavellianism are more likely to occupy a managerial position. Using large and representative panel data, Baktash and Jirjahn (2026) find a positive relationship between Machiavellianism and holding a managerial position also for Germany. Instrumental variable estimations do not provide any evidence of endogeneity issues in the estimated relationship. The authors show that the relationship is monotonic; i.e., those with the highest scores of Machiavellianism are most likely to be managers. Moreover, Baktash and Jirjahn's findings suggest that the direction of influence runs from Machiavellianism to occupational status and not vice versa.

The studies by Lindely (2018) and Baktash and Jirjahn (2026) give rise to the question of how individuals with opportunistic inclinations rise in hierarchy and gain influence on important firm decisions. One simple explanation could be that dark personalities are deliberately hired for managerial positions (Carré et al. 2020; Harris et al. 2022). It may be profitable for a firm to employ managers who are not only strategic but also willing to engage in opportunistic activities such as earnings manipulation, wage theft

and renege on implicit agreements with stakeholders.<sup>3</sup> However, while hiring Machiavellians for opportunistic profit maximization has some plausibility, it is likely to be only a partial explanation for the sorting of Machiavellian individuals into management positions. First of all, there is a screening problem. As Machiavellians tend to hide their opportunistic personality, firms face the difficulty of identifying candidates with personality traits that exactly fit the aim of opportunistic profit maximization. Moreover, once placed in a managerial position, opportunistic individuals tend to pursue their own goals (e.g., advancing their status and power) instead of solely engaging in activities that are profitable to the firm. Thus, even firms interested in opportunistic profit maximization may think twice about deliberately employing Machiavellian managers. Finally, not all firms engage in opportunistic profit maximization. Some firms prefer to avoid opportunism and, hence, are simply not interested in employing Machiavellian managers. These firms are rather interested in building trustful and mutually beneficial relationships with stakeholders and do not want to risk legal problems or a loss of their reputation.

Nonetheless, as emphasized by principal-agent theory, Machiavellians can attain and keep managerial positions even if it is not in the interest of the owners of the firm. Agency theory assumes that governance and control mechanisms within firms are imperfect, implying that there exist information asymmetries (Al-Faryan 2024; Eisenhardt 1989; Jensen and Meckling 1976; Tirole 2001). Information asymmetries give employees discretion in their actions. They can advance their career not only by productive effort but also by counterproductive actions gaming imperfect control and incentive systems. Agency models suggest a series of transmission channels through which employees can make their way into managerial positions by using opportunistic tactics.

Models of career concerns show that employees engage in projects and propose investments that primarily improve their reputation, but do not necessarily maximize the expected financial return to firm owners (Borland 1992; Holmstrom 1999; Holmstrom and Ricart I Costa 1986; Naryana 1985; Scharfstein and Stein 1990). If employees have private information about potential projects, they will put effort in those projects that produce a positive signal of their ability to the bosses or to the managerial labor market.

Moreover, as emphasized by tournament models, the promotion to a managerial position is typically based on a contest among employees and, hence, on relative employee performance (Lazear and Rosen 1981). An employee can improve the chance of being promoted not only by exerting effort to increase own performance but also by engaging in sabotage activities to decrease the performance of their opponents (Chen 2003; Chowdhury and Gürtler 2015; Lazear 1989).<sup>4</sup>

Furthermore, subjective performance evaluations of superiors often play a role in promotion decisions (Baker et al. 1988; Prendergast 1999). As superiors' personal judgements and opinions enter the evaluations, subordinates have an incentive to engage in influence activities that result in a positive evaluation but not necessarily in increased performance (Acemoglu et al. 2008; de Janvry et al. 2023; Jirjahn and Poutsma 2013; Milgrom and Roberts 1988). They may act as “yes men” making proposals that simply mirror the opinion of their superior (Prendergast 1993).

The subjective nature of performance evaluations not only implies that superiors' evaluations may be manipulated without them noticing. As analyzed in models of hidden gaming, this subjective nature also implies that superiors have some discretion they can opportunistically use to secure their position or climb the corporate ladder even higher. The

discretionary nature of performance evaluations provides opportunities for favoritism (Prendergast and Topel 1996). A less-productive superior can favor unproductive subordinates to protect themselves from being replaced by productive subordinates (Friebel and Raith 2004). A superior may also take credit for their subordinates' innovative ideas and put the blame on subordinates when a project fails (Benabou and Tirole 2003). Alternatively, the superior may rate most subordinates highly to demonstrate his or her outstanding managerial skills to those further up in the hierarchy of the firm.

Moreover, superiors can use performance evaluations to reward subordinates who provide private services and are loyal to the superiors' career concerns (Laffont 1990). Such exchange of favorable performance evaluations for private services is an illustration of the general issue of collusion within organizations. Some members of an organization form a strategic alliance at the expense of other members (Laffont and Rochet 1997; Tirole 1986). Of course, collusion can take many forms. Superiors may not only use performance evaluations but also their discretion in task assignment to build collusive arrangements. They may assign loyal subordinates to those tasks and projects that help the subordinates advance their own career (Suzuki 2007).

To summarize, several transmission channels can explain the positive link between Machiavellianism and occupational status that has been found by econometric studies. On the one hand, firms may employ Machiavellian managers for opportunistic profit maximization. On the other hand, imperfect control and incentive systems enable individuals with an opportunistic and manipulative personality to get their way into managerial positions even if it is not in the interest of the owners of the firm. At issue is how far Machiavellian personalities can climb the corporate ladder. In what follows, we

hypothesize that gender plays a crucial moderating role. Machiavellianism is a personality trait that is more likely to help men than women advance into top management positions.

### *2.3 The Moderating Role of Gender*

While women have advanced into managerial positions during the last decades, they are still underrepresented in these positions in many countries (Carli and Eagly 2016). The most powerful organizational positions are dominated by men (Acker 1990). This also holds true for Germany (Kohaut and Möller 2022; Sondergeld et al. 2025). The fact that managerial hierarchies are male dominated suggests that these hierarchies provide less opportunities for women than for men to game imperfect control and incentive systems within firms. Hence, Machiavellianism is less likely to help women than men to make their way into top management positions.

If women advance into middle management, they are often given less responsibilities than their male counterparts at the same hierarchical layer (Lee and Kray 2021). This may be driven by the stereotype that women are less capable leaders than men. The basic point for our topic is that less responsibilities imply less opportunities for female managers to use opportunistic tactics to further advance their career. Female managers may be involved in less important projects that are not suitable for exploitation for personal gain. Female managers may also have a smaller staff they can use for hidden gaming to achieve their personal career aspirations.

Moreover, women rising in hierarchy are increasingly subject to greater scrutiny and heightened visibility than men as occupying a management position is not the norm for women (Ely et al. 2011). This makes it more difficult to use Machiavellian tactics to climb the corporate ladder to the top. For example, being subject to greater scrutiny and

heightened visibility lowers the chance in a promotion tournament to find opportunities for sabotaging opponents without being caught.

Furthermore, informal networks within a firm play an important role in the advancement to higher layers of hierarchy (Ely et al. 2011; Tharenou 2001). Such networks channel the flow of information and provide mentorship and support. Two reasons suggest that women have less access to the informal networks than men. First, women's disproportionate responsibility for family leaves less time to socialize with colleagues and superiors (Eagly and Carly 2007). Second, men tend to exclude women from their networks to protect their male gender identity (Akerlof and Kranton 2000). The limited access to informal networks implies that women high in Machiavellianism have less opportunities to participate in vertical or horizontal collusion within the firm than their male counterparts.

Not only the opportunities to use Machiavellian tactics, but also the backlash to these tactics can differ between men and women. While Machiavellians tend to hide their opportunistic inclinations, there always remains some risk that their opportunistic behaviors are detected. In particular, an individual's Machiavellian inclinations appear to become (at least partially) more visible once the individual advances to positions with a supervisory function. Machiavellians tend to be destructive leaders who undermine a cooperative and trustful work climate (Dahling et al. 2012; Marbut et al. 2025; Schyns and Schilling 2013). Supervisor Machiavellianism leads to lower job satisfaction and motivation and increased burnout among subordinates. Such negative outcomes increase the risk that a supervisor's Machiavellian behavior is detected and sparks backlash for their career. This backlash will be stronger for female supervisors. Machiavellianism is a male personality trait; i.e. men *on average* score higher on Machiavellianism than women

(Confino et al. 2024). Against this background, women high in Machiavellianism run a particularly high risk of being viewed negatively as they tend to act in a gender atypical manner.<sup>5</sup> Such violation of gender norms weakens women's influence and reduces their chances to further climb the corporate ladder to the top (Bolino and Turnley 2003; Eagly and Carli 2007; Eagly and Karau 2002). By contrast, men who are caught being Machiavellian may be more likely to get away with their opportunistic behaviors. An employer interested in opportunistic profit maximization may even promote those men to the respective positions.

Gendered hierarchies and backlash to gender atypical behavior are structural and societal reasons as to why the link between Machiavellianism and occupying a managerial position should differ between men and women. We recognize that broader psychological factors can also play a role. Some psychological studies indicate that men and women high in Machiavellianism seek power and status in different ways (Czibor et al. 2017; Laindi et al. 2022; Semenyna and Honey 2015). Most salient to our topic, Machiavellianism in men is positively and Machiavellianism in women is negatively associated with impulse control (Szabó and Jones 2019). Against the background of mimicry-deception theory, Machiavellians with high and with low impulse control pursue different strategies of exploitation for selfish gain (Kückelhaus et al. 2021). Machiavellians with high impulse control pursue a long-term exploitative strategy. They extract resources from the firm over a long time and at a rather slow but increasing rate to minimize the risk of detection. By contrast, Machiavellians with low impulse control pursue a short-term exploitative strategy. They extract as many resources as possible in a relatively short amount of time and accept a higher risk of detection.<sup>6</sup> Clearly, as climbing the corporate ladder to the top

usually takes many years, a long-term exploitative strategy is more helpful in reaching a top management position than a short-term strategy.

In summary, there are at least three reasons as to why Machiavellianism is a personality trait that is more likely to help men than women climb the corporate ladder to the top. First, an employee's chance to climb the corporate ladder not only depends on their willingness and ability to behave opportunistically but also on the opportunities at hand to game the system. Managerial hierarchies within firms are gendered implying that they provide more opportunities for men than for women to behave opportunistically. Second, even though Machiavellians tend to hide their opportunistic tendencies, an individual's Machiavellian inclinations may become more visible the higher the individual rises in hierarchy. As Machiavellianism is a masculine personality trait, women acting in a Machiavellian manner violate traditional gender norms and, hence, face stronger backlash for their career. Third, men and women high in Machiavellianism appear to pursue different strategies of seeking power and status. Psychological research suggests that men tend to pursue more long-term strategies helping them advance to top management positions.

### **3. Data and Variables**

#### *3.1 The Dataset*

Our empirical examination uses data from the Panel Analysis of Intimate Relationships and Family Dynamics (pairfam), a nationally representative panel dataset for Germany (Bröderl et al. 2018, Hunink et al. 2011). The pairfam is based on a cooperation of University of Bremen, Friedrich Schiller University of Jena, University of Cologne and Ludwig Maximilian University of Munich. The German Research Foundation (DFG)

provides financial support. Kantar Public, a leading survey and opinion research institute, carries out the survey.

A nucleus of themes is addressed annually while different additional topics are sampled in consecutive waves. The survey includes both a personal interview by a professional interviewer and a self-administered questionnaire for particularly sensitive questions. The self-administered questionnaire is completed during the interview using a designated laptop. To avoid interviewer effects, reporting bias, and refusal to answer, all questions on personality are asked in the self-administered questionnaire.

The first wave of interviews was conducted in the year 2008, with this sample providing the basis for the following waves. A refreshment sample has been included since 2018. Nonresponse patterns in the pairfam are similar to other panel studies based on voluntary participation. Bias due to panel attrition does not appear to be a large issue (Müller and Castiglioni 2015).

While the pairfam has a special focus on intimate relationships and family relations, it is unique in that it provides information on both Machiavellianism and the occupational status of the interviewees. This information is available for the waves 2016, 2018 and 2020. We pool the three waves for our analysis. The focus of the analysis is on employees who are 25 years or older since individuals usually do not occupy a managerial position early in their career. Moreover, as managers are typically highly educated, our estimation sample captures only those individuals who have a university degree or a degree from a university of applied sciences. This corresponds to categories 6, 7 and 8 of the International Standard Classification of Education 2011. We do not consider individuals who are unemployed, out of the labor force, marginally employed, self-employed or have an armed forces

occupation. After dropping cases that have missing values in the variables used in the analysis, our overall estimation sample is based on 3,396 observations.

### *3.2 Managers*

Table 1 provides the definitions and descriptive statistics of the dependent variables. Our variables for managers builds from the International Standard Classification of Occupations (ISCO-08). This classification has ten major occupational categories. The first category captures managerial occupations. Employees are managers if they have overall responsibility for the strategic and operational direction of a business or organizational unit. Most salient to our topic, the data allows distinguishing between top-level managers (e.g., chief executives or managing directors) and middle-level managers (e.g., administrative managers, production managers or specialized service managers). Thus, we can examine how far Machiavellians climb the corporate ladder. Sub-major group 11 in ISCO-08 refers to top-level management while sub-major groups 12 and 13 capture middle-level management. Following recommendations in the literature (UN 2018: Indicator 5.5.2), we exclude observations from our main analysis that fall in sub-major group 14 (hospitality, retail and other services managers). Individuals in this group are managers of small organizations which do not usually have a managerial hierarchy (ILO 2023: p. 19). Nonetheless, as a check of robustness, we will also present estimations including that group.

### *3.3 Explanatory Variables*

Table 2 shows the definitions and descriptive statistics of our key explanatory variables and Appendix Table A1 the definitions and descriptive statistics of the control variables.

Psychological research suggests that Machiavellianism is only one of several toxic traits. Together with psychopathy and narcissism, it is part of what is known as the Dark Triad of personality (Furnham et al. 2013, Paulhus and Williams 2002). Thus, to isolate the role of Machiavellianism in occupying a managerial position, we also control for psychopathy and narcissism. The key facets of narcissism are a desire for admiration and sense of personal superiority, grandiosity, dominance, entitlement. The basic characteristics of psychopathy are continuous antisocial behavior, lack of remorse, thrill-seeking, high impulsivity, and low empathy and anxiety.

As usual in large surveys, personality traits are captured in the pairfam by using concise measures. Machiavellianism is captured by items from Küfner et al.'s (2014) Naughty Nine scales. The Naughty Nine measure is a psychometrically optimized version of Jonason and Webster's (2010) Dirty Dozen measure. Jonason and Webster have developed and validated a concise measure of the Dark Triad capturing Machiavellianism, narcissism and psychopathy each with four items, respectively. Their Dirty Dozen measure focuses on items that are most central to each of the three personality traits and behaves in ways that the longer, original measures of the traits do. The concise measure has several advantages. It saves time, avoids response errors from interviewee fatigue, and drops ambiguous items contained in the original measures. The psychometric quality of the Dirty Dozen has been confirmed by a series of follow-up studies for various world regions and countries (Jonason and Luévano 2013, Pechorro et al. 2021, Rogoza et al. 2021). The Dirty Dozen is correlated with the unabridged, original measures and predicts behavior in a similar way suggesting that it indeed taps the same personality traits as the original Dark Triad measures. Küfner et al. (2014) validate the Dirty Dozen measure for Germany but

suggest that it can be improved by using just three instead of four items for each of the dark personality traits.

The three items capturing Machiavellianism focus on the manipulative and opportunistic core of this trait: (1) I tend to manipulate others to get my way; (2) I have used deceit or have lied to get my way; (3) I have used flattery to get my way. Interviewees respond to each of the statements on a five-point Likert scale ranging from 1 “does not apply to me at all” to 5 “applies to me perfectly.” Note that interviewees are assured of absolutely anonymous treatment of the data. Thus, while individuals might tend to hide their Machiavellian orientation in a job interview or at work, they have no incentives for strategic answers in the survey. Moreover, the computer assisted self-interviewing supports truthful responding. We construct a score of Machiavellianism by adding up the items and dividing the sum by three. The score holds together with a Cronbach’s alpha of 0.73 suggesting a suitably high amount of covariation.

While psychopathy is also captured by items of Küfner et al.’s (2014) Naughty Nine measure, the pairfam distinguishes between narcissistic admiration and rivalry (Back et al. 2013). This distinction takes into account that a narcissist’s overarching goal to maintain a grandiose self can be achieved in two separate ways: assertive self-enhancement (“Let others admire you!”) and antagonistic self-protection (“Don’t let others tear you down!”).

In our regressions, we control for a series of economic and socio-demographic characteristics that have been shown to predict career success (Ng et al. 2005). We include variables for age, migration background, marital status, household size, and the number of children. The year of observation and regional influences are accounted for, too. While our

analysis focuses on highly educated individuals, we additionally include a dummy for holding a doctoral degree.

Gender is the key moderating variable in our study. To provide some first insights into the extent of the gender leadership gap in our data, we will run some initial regressions with the combined sample of male and female employees that includes a dummy for women. In the subsequent step, we will provide separate estimations for men and women to examine if the link between Machiavellianism and occupying a managerial position depends on the employee's gender.

### *3.4 Cross Tabulation*

To obtain some first insights into the pattern in the data, Table 3 cross-tabulates the average score of Machiavellianism by gender and occupational status. The table shows two interesting patterns. First, men are on average more Machiavellian than women. This holds true for both managers and non-managers with the gender difference being larger among managers. Second, managers on average score higher in Machiavellianism than non-managers. This holds true for both men and women with the difference between managers and non-managers being larger for men. At issue is now how far male and female Machiavellians can climb the corporate ladder.

## **4. Regression Results**

### *4.1 Key Regression Results*

Table 4 provides the results on our key explanatory variables. The determinants of occupying a managerial position are estimated using the probit procedure. Standard errors are clustered at the person level. Control variables are included in all regressions but

suppressed to save space (see Appendix Tables A2–A4 for the full results). The regressions in Panel A compare managers and non-managers. The dummy dependent variable is equal to 1 if the person is a manager – either a top-level or a middle-level manager – and 0 otherwise. In Panel B, we show regressions comparing middle-level managers and non-managers. The dummy dependent variable is equal 1 if the person is a middle-level manager. It is equal to 0 if the person is a non-manager. Finally, the regressions in Panel C compare top-level and middle-level managers. The dummy dependent variable is equal to 1 if the person is a top-level manager. It is equal to 0 if the person is a middle-level manager.

To set the stage, regressions (1), (4) and (7) use the combined sample of male and female employees. Confirming the well-known gender career gap, regression (1) shows that women are less likely to be managers. This result is not only statistically significant, but also quantitatively quite meaningful. Being a woman decreases the likelihood of holding a managerial position by 2.6 percentage points. Taking into account that 6.7 percent of our observations are managers, this implies a decrease by about 39 percent. Regressions (4) provides some evidence of a sticky floor. Being a woman significantly reduces the likelihood of being a middle-level manager. However, among those who are managers, we do not find a significant influence of gender on the likelihood of occupying a top-level position in regression (7).

Machiavellianism is a significantly positive determinant of holding a managerial position. The magnitude of this influence is meaningful. An additional point on the Machiavellianism scale increases the likelihood of being a manager by 2.7 percentage points. Given that 6.7 of the observations are managers, this is a roughly 40 percent increase in the likelihood of occupying a managerial position. Considering the various layers of

hierarchy, the estimates show that Machiavellianism is significantly associated with being a middle-level manager while they do not provide evidence that Machiavellianism plays a significant role in advancing from a middle-level to a top-level position. However, the full pattern of influences may remain partially obscured until the moderating role of gender is taken into account. Thus, in the next step, we provide separate regressions for men and women.

Regressions (2) and (3) show a significantly positive link between Machiavellianism and occupying a managerial position for both genders with the link being stronger among men than women. An additional point on the Machiavellianism scale is associated with a 3.7 percentage point higher likelihood of occupying a managerial position for men and with a 2 percentage point higher likelihood for women.

Most salient to our topic is the question of whether there are gender differences in the role of Machiavellianism in occupying a middle or top-level management position. Regressions (5) and (6) show that Machiavellianism is a positive determinant of occupying a middle-level position for both men and women. By contrast, considering regressions (8) and (9), we find a significantly positive influence of Machiavellianism on occupying a top-level position only among men but not among women. In the regression for women, the coefficient on Machiavellianism even takes a negative sign. Interestingly, regressions (5) and (8) show that, for men, Machiavellianism has an even stronger influence on occupying a top-level than on occupying a middle management position. For men, an additional point on the Machiavellianism scale increases the likelihood of occupying a middle-level position by 3.1 percentage points and the likelihood of occupying a top-level position by 9.2 percentage points.

To summarize, our estimates confirm that Machiavellianism plays an important role in occupying a managerial position. However, there are important gender differences. While Machiavellianism is a significantly positive determinant of occupying a middle management position among both men and women, it emerges as a significantly positive determinant of occupying a top-level management position only for men but not for women. For men, the impact of Machiavellianism even appears to increase the further they climb the managerial hierarchy.

#### *4.2 Robustness Checks*

We performed a series of further regressions to check the robustness of our results. As explained in section 3.2, we excluded observations falling in ISCO-08 sub-major group 14 (hospitality, retail and other service managers) from our main analysis. In Appendix Table A5, we include these observations in the regressions. As we only have 17 observations falling in sub-major group 14 (8 men and 9 women), we cannot define a separate category for that group. Instead, we combine that group with the middle managers to a category “non-top-level managers.” Using this category instead of the category “middle managers” does not change our key pattern of results.

We note that some studies on the economic outcomes of personality use age-effect free personality variables (Heineck 2011; Nyhus and Pons 2005; Osborne Groves 2005). The idea is to remove age effects by regressing personality on age and employing the predicted residuals in the further analysis. This approach to some extent may pick up unobserved factors that an individual is exposed to over the life course. Returning to our initial estimation sample, we show the results of regressions using age-effect free personality variables in Table A6. This exercise confirms our key pattern of findings.

A small number of previous studies have examined whether the Big Five personality traits (extraversion, openness to experience, conscientiousness, agreeableness, and neuroticism) can explain the gender career gap (Aabo et al. 2024; Fietze et al. 2011; Wille et al. 2018). Thus, it is important to check whether our key results also hold in regressions that control for the Big Five. In our dataset, information on the Big Five is available from waves 2013 and 2017. Assuming that the Big Five personality traits are relatively stable (Cobb-Clark and Schurer 2012), we match the information from 2013 to wave 2016 and the information from 2017 to the waves 2018 and 2020. Table A7 shows the definitions and descriptive statistics of the Big Five personality variables. Table A8 provides the key results of regressions that additionally include the Big Five personality variables as controls. Including the Big Five personality variables does not change the key pattern of results.

## **5. Conclusions**

Previous research has shown that individuals scoring high on Machiavellianism are more likely to occupy a managerial position. This finding fits principal-agent theory. Individuals with an opportunistic and manipulative personality take advantage of imperfect incentive and control systems within firms to get their way into managerial positions. Some firms may even hire Machiavellian managers for opportunistic profit maximization.

Our study takes an important further step to analyze the role of Machiavellianism in managerial processes within organizations. It examines whether gender has an influence on how far Machiavellians climb the managerial hierarchy. Using representative data from Germany, we find that Machiavellianism increases the likelihood of holding a middle management position for both men and women. However, Machiavellianism is associated

with a higher likelihood of occupying a top-level-management position only among men but not among women. The pattern of results persists in a series of robustness checks.

Our findings conform to theoretical considerations suggesting that the personality trait of Machiavellianism is less likely to help women than men climb the corporate ladder to the top. First, managerial hierarchies within firms are gendered implying that they provide less opportunities for female than for male Machiavellians to use their opportunistic talent. For example, women advancing to lower or middle management are often given less responsibilities than their male counterparts at the same layer of hierarchy. Thus, they have less scope than men to employ opportunistic tactics for further advancing their career. Second, Machiavellians climbing the corporate ladder face some risk that their opportunistic behaviors are detected. Detection entails stronger backlash for the career of women as Machiavellianism is a masculine personality trait and women acting in a Machiavellian manner violate traditional gender norms. Third, psychological research suggests that men and women high in Machiavellianism pursue different strategies of seeking power and status. Women tend to pursue more short-term and men more long-term exploitative strategies. As climbing the managerial hierarchy to the top usually takes many years, a long-term exploitative strategy appears to be more successful.

Our estimates also suggest that for men the impact of Machiavellianism even increases the further they climb the managerial hierarchy. Of course, on the one hand, the risk that Machiavellian inclinations are detected may increase the further an individual climbs the managerial hierarchy. However, on the other hand, higher layers of hierarchy provide more opportunities to use opportunistic tactics. An individual is also more likely to compete with Machiavellian colleagues for the next promotion the further he climbs the

hierarchy. This makes it important that the individual himself scores high on Machiavellianism to be successful in the promotion tournament. Moreover, even if an individual's Machiavellianism is detected, some firms may promote a male manager to an even higher position for opportunistic profit maximization.

It is also worth discussing the direct effect of gender. Our estimates show that women are less likely to hold a middle management position than men. However, considering those who are managers, we do not find evidence that gender plays a role in occupying a top-level position. At first glance, this might indicate that there is only a sticky floor but no glass ceiling in the career advancement of women. However, as emphasized by Carli and Eagly (2016), the challenges women face are more complex than suggested by the sticky floor metaphor and glass ceiling metaphor. The challenges may be rather described as a labyrinth. Our findings support this view. While there appears to be no direct influence of gender on occupying a top-level management position, gender plays an important moderating role. A high degree of Machiavellianism only helps men but not women climb the corporate ladder to the top.

Our findings have important policy implications. Promoting gender equality is high on the political agenda in many countries. The crucial question in leadership is whether women do it better than men. In this respect, our study provides two insights. First, women are *on average* less Machiavellian than men. Second, considering women and men with a similar degree of Machiavellianism, this personality trait only increases the chances of men but not the chances of women to get their way to the top. Machiavellians tend to be destructive leaders undermining trustful and cooperative relationships with the stakeholders of the firm and promoting unethical firm behavior (Carré et al. 2020; Dahling

et al. 2012; Marbut et al. 2025; Schyns and Schilling 2013). Thus, in order to reduce the risk of corporate misconduct and abusive leadership, it appears to be worthwhile to consider fostering women's advancement to top-level positions. Of course, the crucial challenge is to promote women in a way that does not open doors to use opportunistic tactics for career advancement. One way could be to implement board gender quotas (de Actuis et al. 2024) and combine these quotas with random components in selection and promotion decisions (Adhvaryu et al. 2026; Berger et al. 20220a; Berger et al. 2020b; Osterloh and Frey 2019).

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**Table 1:** Definition and Descriptive Statistics of the Dependent Variables

| <i>Variable</i>                            | <i>Definition</i>                                                                                                                                                     | <i>Mean</i> | <i>Std.<br/>dev.</i> | <i>N</i> |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|----------|
| Manager vs. non-manager                    | Dummy equals 1 if the individual is a manager according to the ISCO-08 classification. The dummy is equal to 0 if the individual is not a manager.                    | 0.067       | 0.250                | 3,396    |
| Middle-level manager vs. non-manager       | Dummy equals 1 if the individual is a middle-level manager according to the ISCO-08 classification. The dummy is equal to 0 if the individual is not a manager.       | 0.057       | 0.232                | 3,360    |
| Top-level manager vs. middle-level manager | Dummy equals 1 if the individual is a top-level manager according to the ISCO-08 classification. The dummy is equal to 0 if the individual is a middle-level manager. | 0.158       | 0.365                | 228      |

**Table 2:** Definition and Descriptive Statistics of the Key Explanatory Variables

| <i>Variable</i>  | <i>Definition</i>                                                                                                                                                                                                                                                                                                                                                                               | <i>Mean</i> | <i>Std. dev.</i> |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| Machiavellianism | Score of Machiavellianism constructed from adding up three survey items measured on a five-point Likert scale ranging from 1 “does not apply to me at all” to 5 “applies to me perfectly.” The sum of the items is divided by 3. The items are as follows: (1) I tend to manipulate others to get my way; (2) I have used deceit or lied to get my way; (3) I have used flattery to get my way. | 1.767       | 0.724            |
| Woman            | Dummy equals 1 if the individual is a woman.                                                                                                                                                                                                                                                                                                                                                    | 0.544       | 0.498            |

N = 3,396.

**Table 3:** Cross-Tabulation of the Average Machiavellianism Score by Occupational Status and Gender

|                    | <i>Managers</i>  | <i>Non-managers</i> | <i>Difference</i> | <i>t-statistic</i> |
|--------------------|------------------|---------------------|-------------------|--------------------|
| <i>Men</i>         | 2.129<br>(0.867) | 1.871<br>(0.736)    | 0.258             | 3.82***            |
| <i>Women</i>       | 1.855<br>(0.758) | 1.651<br>(0.677)    | 0.204             | 2.83***            |
| <i>Difference</i>  | 0.274            | 0.220               | ---               | ---                |
| <i>t-statistic</i> | 2.48**           | 8.77***             | ---               | ---                |

The table shows the mean score of Machiavellianism. Standard deviations are in parentheses. \*\* Statistically significant at the 5% level; \*\*\* at the 1% level.

**Table 4:** Key Regression Results

|                       | <i>Panel A: Manager vs. non-manager</i>                    |                             |                            |
|-----------------------|------------------------------------------------------------|-----------------------------|----------------------------|
|                       | <i>(1)</i>                                                 | <i>(2)</i>                  | <i>(3)</i>                 |
|                       | <i>All</i>                                                 | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism      | 0.217 [0.027]<br>(0.064)***                                | 0.245 [0.037]<br>(0.085)*** | 0.199 [0.020]<br>(0.097)** |
| Woman                 | -0.206 [-0.026]<br>(0.094)**                               | ---                         | ---                        |
| Control variables     | Included                                                   | Included                    | Included                   |
| Pseudo R <sup>2</sup> | 0.0415                                                     | 0.0464                      | 0.0541                     |
| N                     | 3,396                                                      | 1,548                       | 1,848                      |
|                       | <i>Panel B: Middle-level manager vs. non-manager</i>       |                             |                            |
|                       | <i>(4)</i>                                                 | <i>(5)</i>                  | <i>(6)</i>                 |
|                       | <i>All</i>                                                 | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism      | 0.216 [0.024]<br>(0.068)***                                | 0.220 [0.031]<br>(0.087)**  | 0.221 [0.018]<br>(0.106)** |
| Woman                 | -0.276 [-0.030]<br>(0.098)***                              | ---                         | ---                        |
| Control variables     | Included                                                   | Included                    | Included                   |
| Pseudo R <sup>2</sup> | 0.0497                                                     | 0.0518                      | 0.0612                     |
| N                     | 3,360                                                      | 1,534                       | 1,826                      |
|                       | <i>Panel C: Top-level manager vs. middle-level manager</i> |                             |                            |
|                       | <i>(7)</i>                                                 | <i>(8)</i>                  | <i>(9)</i>                 |
|                       | <i>All</i>                                                 | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism      | 0.010 [0.002]<br>(0.175)                                   | 0.663 [0.092]<br>(0.258)**  | -0.174 [-0.040]<br>(0.293) |
| Woman                 | 0.460 [0.099]<br>(0.307)                                   | ---                         | ---                        |
| Control variables     | Included                                                   | Included                    | Included                   |
| Pseudo R <sup>2</sup> | 0.1375                                                     | 0.2399                      | 0.2530                     |
| N                     | 228                                                        | 134                         | 94                         |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \*\* Statistically significant at the 5% level; \*\*\* at the 1% level.

## Appendix

**Table A1:** Definition and Descriptive Statistics of the Control Variables

| <i>Variable</i>             | <i>Definition</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            | <i>Mean</i> | <i>Std. dev.</i> |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| Psychopathy                 | Score of psychopathy constructed from adding up three survey items measured on a five-point Likert scale ranging from 1 “does not apply to me at all” to 5 “applies to me perfectly.” The sum of the items is divided by 3. The items are as follows: (1) I tend to lack remorse; (2) I tend not to be too concerned with the morality of my actions; (3) I tend to be callous or insensitive.                                                               | 1.631       | 0.666            |
| Narcissistic rivalry        | Score of narcissistic rivalry constructed from adding up three survey items measured on a five-point Likert scale ranging from 1 “does not apply to me at all” to 5 “applies to me perfectly.” The sum of the items is divided by 3. The items are as follows: (1) I react annoyed if another person steals the show from me; (2) I want my rivals to fail; (3) Most people are somehow losers.                                                              | 1.504       | 0.598            |
| Narcissistic admiration     | Score of narcissistic admiration constructed from adding up three survey items measured on a five-point Likert scale ranging from 1 “does not apply to me at all” to 5 “applies to me perfectly.” The sum of the items is divided by 3. The items are as follows: (1) I deserve to be seen as a great personality; (2) Being a very special person gives me a lot of strength; (3) I manage to be the center of attention with my outstanding contributions. | 1.917       | 0.843            |
| Migration background        | Dummy equals 1 if the person is a first-generation or second-generation immigrant.                                                                                                                                                                                                                                                                                                                                                                           | 0.181       | 0.385            |
| Married                     | Dummy equals 1 if the person is married.                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.511       | 0.500            |
| Number of previous partners | The number of previous partners the person had.                                                                                                                                                                                                                                                                                                                                                                                                              | 1.805       | 1.613            |
| Age                         | The person’s age by years.                                                                                                                                                                                                                                                                                                                                                                                                                                   | 36.961      | 7.230            |
| Age-squared                 | The person’s age squared.                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1418.36     | 536.03           |
| Household size              | The number of persons in the household.                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.871       | 1.316            |
| Number of children          | The number of children in the household.                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.007       | 1.113            |
| Doctoral degree             | Dummy equals 1 if the person has a doctoral degree.                                                                                                                                                                                                                                                                                                                                                                                                          | 0.056       | 0.230            |
| East Germany                | Dummy equals 1 if the person is living in East Germany.                                                                                                                                                                                                                                                                                                                                                                                                      | 0.245       | 0.430            |
| Wave dummies                | Two wave dummies for the years 2018 and 2020. The reference wave is the year 2016.                                                                                                                                                                                                                                                                                                                                                                           | ---         | ---              |

N = 3,396.

**Table A2:** Manager vs. Non-Manager; Full Results

|                             | <i>All</i>                   | <i>Men</i>                   | <i>Women</i>                 |
|-----------------------------|------------------------------|------------------------------|------------------------------|
| Machiavellianism            | 0.217 [0.027]<br>(0.064)***  | 0.245 [0.037]<br>(0.085)***  | 0.199 [0.020]<br>(0.097)**   |
| Psychopathy                 | 0.037 [0.005]<br>(0.062)     | 0.103 [0.015]<br>(0.075)     | -0.076 [-0.008]<br>(0.108)   |
| Narcissistic rivalry        | -0.143 [-0.018]<br>(0.080)*  | -0.095 [-0.014]<br>(0.096)   | -0.169 [-0.017]<br>(0.138)   |
| Narcissistic admiration     | 0.104 [0.013]<br>(0.057)*    | -0.001 [0.000]<br>(0.080)    | 0.230 [0.023]<br>(0.077)***  |
| Woman                       | -0.206 [-0.026]<br>(0.094)** | ---                          | ---                          |
| Age                         | 0.087 [0.011]<br>(0.073)     | 0.206 [0.031]<br>(0.103)**   | 0.006 [0.001]<br>(0.104)     |
| Age-squared                 | -0.001 [-0.0001]<br>(0.001)  | -0.002 [-0.0004]<br>(0.001)* | 0.000 [0.00001]<br>(0.001)   |
| Migration background        | -0.009 [-0.001]<br>(0.118)   | 0.082 [0.012]<br>(0.174)     | -0.093 [-0.009]<br>(0.166)   |
| Married                     | 0.159 [0.020]<br>(0.117)     | 0.194 [0.029]<br>(0.171)     | 0.096 [0.010]<br>(0.158)     |
| Number of previous partners | -0.014 [-0.002]<br>(0.029)   | 0.033 [0.005]<br>(0.035)     | -0.111 [-0.011]<br>(0.051)** |
| Household size              | 0.022 [0.003]<br>(0.079)     | 0.145 [0.022]<br>(0.095)     | -0.112 [-0.011]<br>(0.144)   |
| Number of children          | -0.131 [-0.016]<br>(0.098)   | -0.217 [-0.033]<br>(0.128)*  | -0.033 [-0.003]<br>(0.166)   |
| Doctoral degree             | -0.108 [-0.013]<br>(0.202)   | -0.294 [-0.044]<br>(0.266)   | 0.159 [0.016]<br>(0.295)     |
| East Germany                | 0.221 [0.030]<br>(0.107)**   | 0.183 [0.028]<br>(0.148)     | 0.267 [0.027]<br>(0.154)*    |
| Wave dummies                | Included                     | Included                     | Included                     |
| Pseudo R <sup>2</sup>       | 0.0415                       | 0.0464                       | 0.0541                       |
| N                           | 3,396                        | 1,548                        | 1,848                        |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \* Statistically significant at the 10% level; \*\* at the 5% level; \*\*\* at the 1% level.

**Table A3:** Middle-Level Manager vs. Non-Manager; Full Results

|                             | <i>All</i>                    | <i>Men</i>                   | <i>Women</i>                |
|-----------------------------|-------------------------------|------------------------------|-----------------------------|
| Machiavellianism            | 0.216 [0.024]<br>(0.068)***   | 0.220 [0.031]<br>(0.087)**   | 0.221 [0.018]<br>(0.106)**  |
| Psychopathy                 | 0.059 [0.006]<br>(0.064)      | 0.162 [0.022]<br>(0.075)**   | -0.129 [-0.010]<br>(0.122)  |
| Narcissistic rivalry        | -0.173 [-0.019]<br>(0.085)**  | -0.121 [-0.017]<br>(0.101)   | -0.207 [-0.017]<br>(0.159)  |
| Narcissistic admiration     | 0.099 [0.011]<br>(0.062)      | -0.005 [-0.001]<br>(0.086)   | 0.238 [0.019]<br>(0.087)*** |
| Woman                       | -0.276 [-0.030]<br>(0.098)*** | ---                          | ---                         |
| Age                         | 0.107 [0.012]<br>(0.077)      | 0.166 [0.023]<br>(0.107)     | 0.083 [0.007]<br>(0.113)    |
| Age-squared                 | -0.001 [-0.0001]<br>(0.001)   | -0.002 [-0.0003]<br>(0.001)  | -0.001 [-0.0001]<br>(0.002) |
| Migration background        | 0.054 [0.006]<br>(0.124)      | 0.074 [0.010]<br>(0.183)     | 0.031 [0.003]<br>(0.173)    |
| Married                     | 0.129 [0.014]<br>(0.125)      | 0.169 [0.023]<br>(0.182)     | 0.064 [0.005]<br>(0.164)    |
| Number of previous partners | -0.009 [-0.001]<br>(0.030)    | 0.038 [0.005]<br>(0.036)     | -0.110 [-0.009]<br>(0.056)* |
| Household size              | 0.049 [0.005]<br>(0.080)      | 0.142 [0.020]<br>(0.097)     | -0.062 [-0.005]<br>(0.145)  |
| Number of children          | -0.171 [-0.019]<br>(0.100)*   | -0.196 [-0.027]<br>(0.132)   | -0.142 [-0.011]<br>(0.163)  |
| Doctoral degree             | -0.382 [-0.032]<br>(0.203)*   | -0.649 [-0.090]<br>(0.299)** | -0.066 [-0.005]<br>(0.279)  |
| East Germany                | 0.171 [0.020]<br>(0.114)      | 0.181 [0.025]<br>(0.154)     | 0.142 [0.011]<br>(0.166)    |
| Wave dummies                | Included                      | Included                     | Included                    |
| Pseudo R <sup>2</sup>       | 0.0497                        | 0.0518                       | 0.0612                      |
| N                           | 3,360                         | 1,534                        | 1,826                       |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \* Statistically significant at the 10% level; \*\* at the 5% level; \*\*\* at the 1% level.

**Table A4:** Top-Level Manager vs. Middle-Level Manager; Full Results

|                             | <i>All</i>                  | <i>Men</i>                    | <i>Women</i>                 |
|-----------------------------|-----------------------------|-------------------------------|------------------------------|
| Machiavellianism            | 0.010 [0.002]<br>(0.175)    | 0.663 [0.092]<br>(0.258)**    | -0.174 [-0.040]<br>(0.293)   |
| Psychopathy                 | -0.353 [-0.073]<br>(0.198)* | -1.290 [-0.180]<br>(0.428)*** | 0.371 [0.085]<br>(0.310)     |
| Narcissistic rivalry        | 0.340 [0.070]<br>(0.224)    | 0.184 [0.026]<br>(0.329)      | 0.428 [0.098]<br>(0.387)     |
| Narcissistic admiration     | -0.058 [-0.012]<br>(0.133)  | -0.107 [-0.015]<br>(0.187)    | -0.505 [-0.115]<br>(0.251)** |
| Woman                       | 0.460 [0.099]<br>(0.307)    | ---                           | ---                          |
| Age                         | -0.109 [-0.023]<br>(0.201)  | 0.214 [0.030]<br>(0.217)      | -0.596 [-0.136]<br>(0.347)*  |
| Age-squared                 | 0.001 [0.0003]<br>(0.003)   | -0.003 [-0.0004]<br>(0.003)   | 0.008 [0.0018]<br>(0.005)*   |
| Migration background        | -0.341 [-0.064]<br>(0.382)  | 0.125 [0.017]<br>(0.502)      | -1.325 [-0.302]<br>(0.554)** |
| Married                     | 0.179 [0.037]<br>(0.319)    | -0.177 [-0.025]<br>(0.417)    | 0.501 [0.114]<br>(0.539)     |
| Number of previous partners | 0.032 [0.007]<br>(0.100)    | 0.055 [0.008]<br>(0.101)      | 0.193 [0.044]<br>(0.174)     |
| Household size              | -0.133 [-0.028]<br>(0.273)  | 0.025 [0.003]<br>(0.488)      | -0.232 [-0.053]<br>(0.237)   |
| Number of children          | 0.259 [0.054]<br>(0.324)    | 0.101 [0.014]<br>(0.522)      | 0.452 [0.103]<br>(0.378)     |
| Doctoral degree             | 1.346 [0.414]<br>(0.578)**  | 1.884 [0.263]<br>(0.652)***   | 0.522 [0.119]<br>(0.843)     |
| East Germany                | 0.381 [0.084]<br>(0.281)    | 0.115 [0.016]<br>(0.417)      | 0.817 [0.187]<br>(0.444)*    |
| Wave dummies                | Included                    | Included                      | Included                     |
| Pseudo R <sup>2</sup>       | 0.1375                      | 0.2399                        | 0.2530                       |
| N                           | 228                         | 134                           | 94                           |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \* Statistically significant at the 10% level; \*\* at the 5% level; \*\*\* at the 1% level.

**Table A5:** Key Regression Results; Including ISCO-08 Sub-Major Group 14

|                       | <i>Panel A: Managers vs. non-managers</i>                     |                             |                             |
|-----------------------|---------------------------------------------------------------|-----------------------------|-----------------------------|
|                       | <i>(1)</i>                                                    | <i>(2)</i>                  | <i>(3)</i>                  |
|                       | <i>All</i>                                                    | <i>Men</i>                  | <i>Women</i>                |
| Machiavellianism      | 0.244 [0.032]<br>(0.063)***                                   | 0.246 [0.038]<br>(0.082)*** | 0.256 [0.027]<br>(0.095)*** |
| Woman                 | -0.206 [-0.027]<br>(0.091)**                                  | ---                         | ---                         |
| Control variables     | Included                                                      | Included                    | Included                    |
| Pseudo R <sup>2</sup> | 0.0368                                                        | 0.0455                      | 0.0483                      |
| N                     | 3,413                                                         | 1,556                       | 1,857                       |
|                       | <i>Panel B: Non-top-level managers vs. non-managers</i>       |                             |                             |
|                       | <i>(4)</i>                                                    | <i>(5)</i>                  | <i>(6)</i>                  |
|                       | <i>All</i>                                                    | <i>Men</i>                  | <i>Women</i>                |
| Machiavellianism      | 0.247 [0.029]<br>(0.067)***                                   | 0.221 [0.032]<br>(0.084)*** | 0.285 [0.025]<br>(0.104)*** |
| Woman                 | -0.269 [-0.032]<br>(0.094)***                                 | ---                         | ---                         |
| Control variables     | Included                                                      | Included                    | Included                    |
| Pseudo R <sup>2</sup> | 0.0444                                                        | 0.0516                      | 0.0551                      |
| N                     | 3,377                                                         | 1,542                       | 1,835                       |
|                       | <i>Panel C: Top-level managers vs. non-top-level managers</i> |                             |                             |
|                       | <i>(7)</i>                                                    | <i>(8)</i>                  | <i>(9)</i>                  |
|                       | <i>All</i>                                                    | <i>Men</i>                  | <i>Women</i>                |
| Machiavellianism      | -0.015 [-0.003]<br>(0.177)                                    | 0.675 [0.090]<br>(0.261)*** | -0.201 [-0.044]<br>(0.284)  |
| Woman                 | 0.454 [0.093]<br>(0.302)                                      | ---                         | ---                         |
| Control variables     | Included                                                      | Included                    | Included                    |
| Pseudo R <sup>2</sup> | 0.1393                                                        | 0.2402                      | 0.2476                      |
| N                     | 245                                                           | 142                         | 103                         |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \*\* Statistically significant at the 5% level; \*\*\* at the 1% level. An individual is defined as a non-top-level manager if their occupations falls in sub-major group 12, 13 or 14 of ISCO-08. The category “managers” comprises non-top-level and top-level managers.

**Table A6: Key Regression Results; Age-Effect-Free Personality Variables**

|                       | <i>Panel A: Managers vs. non-managers</i>                    |                             |                            |
|-----------------------|--------------------------------------------------------------|-----------------------------|----------------------------|
|                       | <i>(1)</i>                                                   | <i>(2)</i>                  | <i>(3)</i>                 |
|                       | <i>All</i>                                                   | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism      | 0.216 [0.027]<br>(0.064)***                                  | 0.238 [0.036]<br>(0.084)*** | 0.198 [0.020]<br>(0.096)** |
| Woman                 | -0.216 [-0.027]<br>(0.095)**                                 | ---                         | ---                        |
| Control variables     | Included                                                     | Included                    | Included                   |
| Pseudo R <sup>2</sup> | 0.0379                                                       | 0.0384                      | 0.0508                     |
| N                     | 3,396                                                        | 1,548                       | 1,848                      |
|                       | <i>Panel B: Middle-level managers vs. non-managers</i>       |                             |                            |
|                       | <i>(4)</i>                                                   | <i>(5)</i>                  | <i>(6)</i>                 |
|                       | <i>All</i>                                                   | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism      | 0.215 [0.024]<br>(0.068)***                                  | 0.212 [0.030]<br>(0.086)**  | 0.225 [0.018]<br>(0.106)** |
| Woman                 | -0.285 [-0.031]<br>(0.098)***                                | ---                         | ---                        |
| Control variables     | Included                                                     | Included                    | Included                   |
| Pseudo R <sup>2</sup> | 0.0453                                                       | 0.0454                      | 0.0576                     |
| N                     | 3,360                                                        | 1,534                       | 1,826                      |
|                       | <i>Panel C: Top-level managers vs. middle-level managers</i> |                             |                            |
|                       | <i>(7)</i>                                                   | <i>(8)</i>                  | <i>(9)</i>                 |
|                       | <i>All</i>                                                   | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism      | 0.010 [0.002]<br>(0.173)                                     | 0.681 [0.096]<br>(0.261)*** | -0.132 [-0.032]<br>(0.274) |
| Woman                 | 0.475 [0.102]<br>(0.307)                                     | ---                         | ---                        |
| Control variables     | Included                                                     | Included                    | Included                   |
| Pseudo R <sup>2</sup> | 0.1356                                                       | 0.2350                      | 0.2006                     |
| N                     | 228                                                          | 134                         | 94                         |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \*\* Statistically significant at the 5% level; \*\*\* at the 1% level.

**Table A7: Definition and Descriptive Statistics of the Big Five Personality Variables**

| <i>Variable</i>   | <i>Definition</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <i>Mean</i> | <i>Std. dev.</i> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------|
| Openness          | Score of openness to experience constructed from adding up five survey items measured on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” The sum of items is divided by 5. The items are as follows: (1) I am interested in many kinds of things, (2) I am intellectual and like to contemplate things, (3) I am very imaginative, (4) I appreciate artistic and esthetic impressions, and (5) I am hardly interested in art. Item 5 was recoded in reverse order before adding up. | 3.723       | 0.722            |
| Conscientiousness | Score of conscientiousness constructed from adding up four survey items measured on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” The sum of items is divided by 4. The items are as follows: (1) I complete my tasks thoroughly, (2) I make things comfortable for myself and tend to be lazy, (3) I am proficient and work fast, and (4) I make plans and carry them out. Item 2 was recoded in inverse order before adding up.                                                 | 3.868       | 0.579            |
| Extraversion      | Score of extraversion constructed from adding up four survey items measured on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” The sum of items is divided by 4. The items are as follows: (1) I am usually modest and reserved, (2) I get enthusiastic easily and can motivate others easily, (3) I tend to be the strong and silent type, and (4) I am expansive and gregarious. Items 1 and 3 were recoded in inverse order before adding up.                                    | 3.511       | 0.853            |
| Agreeableness     | Score of agreeableness constructed from adding up four survey items measured on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” The sum of items is divided by 4. The items are as follows: (1) I tend to criticize others, (2) I trust others easily and believe that people are inherently good, (3) I can be cold and distanced in my behavior, and (4) I can be gruff and dismissive with others. Items 1, 3, and 4 were recoded in inverse order before adding up.             | 3.322       | 0.718            |
| Neuroticism       | Score of neuroticism constructed from adding up four survey items measured on a 5-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” The sum of items is divided by 4. The items are as follows: (1) I easily become depressed or discouraged, (2) I am relaxed and do not let myself be worried by stress, (3) I worry a lot, and (4) I easily become nervous and insecure. Item 2 was recoded in reverse order before adding up.                                                            | 2.715       | 0.810            |

N = 3,302.

**Table A8: Key Regression Results; Big Five Personality Variables Included**

|                                | <i>Panel A: Managers vs. non-managers</i>                    |                             |                            |
|--------------------------------|--------------------------------------------------------------|-----------------------------|----------------------------|
|                                | <i>(1)</i>                                                   | <i>(2)</i>                  | <i>(3)</i>                 |
|                                | <i>All</i>                                                   | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism               | 0.210 [0.026]<br>(0.067)***                                  | 0.230 [0.034]<br>(0.089)*** | 0.199 [0.019]<br>(0.098)** |
| Woman                          | -0.232 [-0.029]<br>(0.100)**                                 | ---                         | ---                        |
| Big Five personality variables | Included                                                     | Included                    | Included                   |
| Control variables              | Included                                                     | Included                    | Included                   |
| Pseudo R <sup>2</sup>          | 0.0474                                                       | 0.0604                      | 0.0705                     |
| N                              | 3,302                                                        | 1,503                       | 1,799                      |
|                                | <i>Panel B: Middle-level managers vs. non-managers</i>       |                             |                            |
|                                | <i>(4)</i>                                                   | <i>(5)</i>                  | <i>(6)</i>                 |
|                                | <i>All</i>                                                   | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism               | 0.212 [0.023]<br>(0.072)***                                  | 0.210 [0.028]<br>(0.093)**  | 0.233 [0.018]<br>(0.110)** |
| Woman                          | -0.299 [-0.032]<br>(0.103)***                                | ---                         | ---                        |
| Big Five personality variables | Included                                                     | Included                    | Included                   |
| Control variables              | Included                                                     | Included                    | Included                   |
| Pseudo R <sup>2</sup>          | 0.0554                                                       | 0.0644                      | 0.0867                     |
| N                              | 3,266                                                        | 1,489                       | 1,777                      |
|                                | <i>Panel C: Top-level managers vs. middle-level managers</i> |                             |                            |
|                                | <i>(7)</i>                                                   | <i>(8)</i>                  | <i>(9)</i>                 |
|                                | <i>All</i>                                                   | <i>Men</i>                  | <i>Women</i>               |
| Machiavellianism               | 0.012 [0.002]<br>(0.167)                                     | 0.636 [0.084]<br>(0.288)**  | -0.074 [-0.015]<br>(0.329) |
| Woman                          | 0.399 [0.087]<br>(0.341)                                     | ---                         | ---                        |
| Big Five personality variables | Included                                                     | Included                    | Included                   |
| Control variables              | Included                                                     | Included                    | Included                   |
| Pseudo R <sup>2</sup>          | 0.1460                                                       | 0.3201                      | 0.3506                     |
| N                              | 219                                                          | 128                         | 91                         |

Method: Probit. The table shows the estimated coefficients. Standard errors in parentheses are clustered at the person level. Average marginal effects are in square brackets. \*\* Statistically significant at the 5% level; \*\*\* at the 1% level.

## Endnotes

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<sup>1</sup> See Bertrand (2009), Bertrand and Mullainathan (2001), Carson (2003), Dyck et al. (2024), Frydman and Jenter (2010), Hail et al. (2018), Krasikova et al. (2013), Raghunandan (2021), Schnatterly et al. (2018), and Schyns and Schilling (2013).

<sup>2</sup> The question of whether managers are more Machiavellian than other employees has also received relatively little attention in psychology. A handful of psychological studies addressed this question but used small datasets and obtained mixed results (Nuzulia and Why 2020, Paleczek et al. 2018, Spurk et al. 2016). Some other psychological studies considered the role of related personality traits such as psychopathy but ignore Machiavellianism (Babiak et al. 2010). This is problematic. If personality traits are correlated, the influence of each trait can only be disentangled in a multivariate analysis that controls for the other traits.

<sup>3</sup> In the economic literature, hostile takeovers are one example for opportunistic profit maximization (Shleifer and Summers 1988). Hostile takeovers facilitate opportunistic profit maximization, as they do not only involve the replacement of inefficient managers, but also the replacement of managers who are loyal to the firm's stakeholders. For example, newly installed managers may break promises made to the workforce by reverting pension plans, reducing the employment of more-tenured employees or flattening their wage-tenure profiles (Gokhale et al. 1995, Pontiff et al. 1990). Such opportunism is particularly effective if the new managers lack moral concerns and are cunning in finding ways for rent extraction and covering up their opportunistic actions.

<sup>4</sup> Sabotage activities can take many forms, such as refusing help and cooperation, spreading rumors about opponents, purposefully delaying execution, and transmitting false information. Employees may even collude to sabotage high-ability opponents.

<sup>5</sup> Traditional gender roles place men in a dominant and women in a subordinate position (Wood and Eagly 2012). Men are expected to be forceful and self-assertive whereas women are expected to be docile, caring and generous.

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<sup>6</sup> The distinction between short-term and long-term exploitative strategies also applies to nonhuman animals and microorganisms (Jones 2014). A short-term strategy can be observed in predators using relatively detectable deception to overwhelm their unsuspecting victims. For example, some predators use their exterior coloring to confuse their prey and approach unnoticed. By contrast, the long-term strategy is found in parasitic infections and viral diseases. The victim unknowingly acts as a host that is unaware of the infection because of the complex deception techniques of the parasite.