

Personality Traits and Career Success: Understanding Workplace Dynamics^{*}

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Abstract

How do personality traits affect career outcomes? We study the role of personality in career advancement using detailed personnel records from a business solutions firm. Employees with higher levels of extraversion are significantly more likely to be promoted, while those with higher neuroticism scores face lower promotion probabilities. Gender differences in extraversion partly explain the observed gender gap in promotions. Role and task assignments largely mediate the link between personality and promotion—employees who receive “stretch assignments” are promoted faster. Our evidence points to both productivity-related and non-productivity-related factors underlying this relationship. First, interpersonal skills are the key determinant of role and task assignment, and extraverts possess superior skills from the outset, enabling them to continue excelling after promotion. Second, extraverts have an advantage in building relationships with supervisors, which may lead to better developmental assignments based on trust and favoritism, yet supervisors with more extraverted subordinates do not perform better. Our findings illustrate how personality-driven social dynamics influence firms’ internal labor markets, offering insights into how assignment and promotion policies affect leadership pipelines and organizational equity.

Keywords: personality, promotion, task assignment, manager, non-cognitive skill, overconfidence, leadership

JEL: J16, J24, M51, M53

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1. Introduction

Understanding how firms identify, develop, and promote talent is central to organizational strategy. Moving beyond traditional predictors such as education, work experience, and cognitive ability, the role of personality traits in shaping career outcomes has attracted increasing attention (Mount and Barrick, 1998; Groysberg, 2010; Borghans et al., 2008; Gensowski, 2018; Wilmot et al., 2019; Heckman et al., 2021). Despite growing evidence that certain traits—such as extraversion and conscientiousness—correlate with leadership attainment, the mechanisms through which personality influences promotion are not yet fully understood. In particular, it is unclear whether personality traits enhance promotion prospects by improving productivity, signaling leadership potential, or facilitating better social alignment with those making promotion decisions.

The literature proposes several possible channels. Economic studies often treat personality traits as inputs in production functions, or relate them to parameters in matching and bargaining models or preferences that shape choices regarding efforts, working hours and resource allocation (Borghans et al., 2008; Flinn et al., 2018, 2020; Jagelka, 2024). However, the mechanisms through which individual personality traits influence labor market outcome remain largely a black box. If personality traits interact with efforts in determining output, it could affect the provision of effort. For example, individuals with traits associated with higher self-efficacy—such as an internal locus of control—may perceive greater returns to effort and, consequently, exert more effort and achieve better career outcomes (Bowles et al., 2001). More specific mechanisms have been examined in the management field. One explanation emphasizes personality’s influence on leadership style: firms may prefer individuals whose personalities facilitate the adoption of desirable managerial behaviors (Judge and Bono, 2000; Mumford et al., 2007). Another perspective focuses on the quality of relationships between supervisors and subordinates. Studies based on leader–member exchange (LMX) theory suggest that compatibility fosters trust and cooperation, which in turn can influence evaluations and career outcomes (Duchon et al., 1986; Pelled and Xin, 2000; Varma and Stroh, 2001). However, empirical evidence on the role of personality compatibility in these relationships remains mixed (Glomb and Welsh, 2005; Bernerth et al., 2008; Oren and Alon, 2012; Peng, 2020).

This study examines how personality traits influence promotions and through which mechanisms these effects operate. Using detailed talent management records from a Japanese business solutions firm, we link employees’ personality profiles to their role assignments, performance evaluations, and promotion histories. The dataset provides three distinct advantages. First, all employees completed an aptitude test containing 43

personality-related questions, enabling standardized measures of the Big Five traits. Second, the firm’s semiannual assessments capture longitudinal changes in employees’ social skills, allowing us to trace how personality shapes skill development. Third, the dataset includes a unique measure—mission grade—that quantifies the scope and complexity of assigned tasks, thereby revealing how supervisors allocate responsibilities.

Our analyses lead to two key findings. First, employees with higher extraversion are significantly more likely to be promoted, while those with higher neuroticism have a lower probability of promotion: a one SD increase in extraversion score corresponds to a 20% rise in promotion probability, whereas a one SD increase in neuroticism score results in a 13% reduction in promotion probability. These patterns remain robust after controlling for division and supervisor fixed effects. Gender differences in extraversion account for roughly 20% of the observed promotion gap between men and women. Second, role and task assignments largely mediate the link between personality and promotion, suggesting that “stretch assignments” serve as the key pathway through which personality affects advancement. Performance evaluations add little explanatory power once assignments are considered.

To uncover the mechanism underlying why extraverts receive “stretch assignments”, we test three hypotheses: (1) extraverts exhibit greater overconfidence; (2) extraverts possess superior interpersonal skills initially or develop them faster; and (3) extraverts benefit from stronger relationships with supervisors who control task assignments. The evidence supports that extraverts possess higher interpersonal skills initially and are advantaged in relationships with supervisors, highlighting the importance of supervisor–subordinate relationships in shaping internal labor market outcomes.

The key question arising from these findings is whether supervisors assign greater responsibilities to extraverts due to productivity consideration or other factors, such as favoritism or being misled. Our evidence supports both productivity-related and non-productivity-related factors. On the one hand, we find that extraverts perform better after promotion and initially possess higher skill levels, which fully account for the greater responsibilities they receive. These patterns are consistent with productivity-based considerations. On the other hand, we find that extraverts develop better relationships with their supervisors, whereas supervisors with more extraverted subordinates do not perform better. Moreover, we find no evidence that extraverts mislead uninformed supervisors. These patterns align with non-productivity-related factors such as favoritism or trust, rather than being misled.

Our contribution to the literature is threefold. First, it advances work in personnel

psychology and economics linking personality traits to economic success by identifying the specific pathways through which extraversion fosters career advancement. Second, it adds to the growing literature in labor economics emphasizing the rising importance of social skills (Deming, 2017; Hansen, 2021). Our literature review demonstrates that, over the past two decades, extraversion has consistently emerged as the strongest predictor of career advancement—a pattern that coincides with the growing importance of social skills during this period. Third, it contributes to strategic management research by showing that promotion systems can systematically favor employees who build strong vertical relationships, thereby influencing leadership pipelines and potentially reinforcing gender disparities (Ragins and Cotton, 1999; Charan et al., 2011; Bidwell and Mollick, 2015; Bidwell and Keller, 2024). Together, these findings highlight how personality-driven social dynamics shape firms’ internal talent allocation—a key component of business strategy.

The remainder of the paper is organized as follows. Section 2 reviews the related literature, Section 3 describes the data, Section 4 outlines the empirical strategy, Section 5 presents the results, and Section 6 concludes.

2. Literature Review

The recognition of personality traits as important determinants of job performance began to emerge in the personnel psychology literature during the 1950s. Tupes (1959) represents one of the first systematic and statistically grounded attempts to relate broad personality factors to job effectiveness. The five-factor model also took shape around this time, demonstrating strong empirical support for its explanatory power. A substantial body of evidence linking the Big Five traits to job performance accumulated in the 1980s. Table 1 presents a representative, thought not exhaustive, list of prior studies, including meta-analyses of studies from the 1980s as well as more recent research.

Overall, the table suggests that the relationship between personality traits and labor market outcomes varies across gender, occupation, culture and time, and depending on what outcome variables they use. Three key insights emerge from these patterns. First, early studies—such as Barrick and Mount (1991), a meta-analysis of 117 studies conducted in the United States and Canada, and Salgado (1997), a meta-analysis based on studies carried out in European countries—consistently identify conscientiousness as the strongest and most reliable predictor of job performance. However, the predictive power of conscientiousness is not supported by more recent studies as shown in Table 1. Judge and Kammeyer-Mueller (2007) conclude, *“In sum, it appears that the multivariate results on the relationship between conscientiousness and intrinsic and extrinsic success are far from*

consistent.”

Second, the earlier studies mentioned above, as well as some later ones such as Heckman et al. (2006), show that extraversion is positively associated with job performance only in occupations involving social interaction, such as managers, sales and police. Some of the more recent studies, however, indicates that extraversion is positively associated with labor market outcomes across a broader range of occupations. This tendency is especially evident in studies that examine career advancement—such as promotion—as the labor market outcome. Ng et al. (2005), a meta-analysis conducted in the early 2000s, investigate predictors of both objective and subjective career success—salary level and promotions as objective measures and career satisfaction as a subjective measure—and find that extraversion as well as conscientiousness are positively related to both types of career success, while neuroticism shows a negative relationship with these outcomes. Wilmot et al. (2019), in a second-order meta-analysis of 97 studies, find that extraversion is generally and consistently positively associated with work-related outcomes, including motivation, well-being, interpersonal relations, and job performance.¹ This apparent shift in observed patterns may align with Deming (2017)’s observation that the value of social skills has increased over the past few decades, as extraverts are more likely to enjoy and engage in social interactions. However, such findings are not unanimous. Several studies continue to report no significant association between extraversion and labor market outcomes (Nyhus and Pons, 2005; Mueller and Plug, 2006; Heineck and Anger, 2010; Flinn et al., 2018). This suggests that cultural contexts in each country may moderate the influence of personality traits on labor market performance and career advancement. Indeed, using survey data from Japan and the United States, Lee and Ohtake (2018) find that agreeableness is associated with higher annual income for male workers in Japan but is penalized for their counterparts in the United States. In Japan, the income premium for agreeableness is more pronounced in large firms, whereas in the United States, the wage penalty appears only in small firms. They also find that, among men, extraversion is the only personality trait that significantly influences career advancement in both contexts.²

¹The study also examines lower-order traits of extraversion, showing that facets such as positive emotions consistently predict beneficial outcomes, sociability provides limited advantages, and sensation-seeking is often linked to negative effects.

²The wage premium of agreeableness is not necessarily confirmed by other studies using Japanese data including this paper. Yasui et al. (2020), which provides the first evidence from Japan on how both cognitive and non-cognitive skills affect individual wages using data from an internet survey, finds robust evidence of a significant positive effect of extraversion on wages but does not report a similar result for agreeableness.

Thirdly, several studies report substantial gender differences. Using data from the DNB Household Survey in the Netherlands, Nyhus and Pons (2005) find that extraversion and agreeableness negatively affect wages for women, while emotional stability is positively correlated with wages for both men and women. Mueller and Plug (2006) analyze a large sample of men and women who graduated from high schools in a U.S. state and find that agreeableness is negatively correlated with earnings only for men, whereas emotional stability positively affects male earnings. Openness to experience is rewarded for both men and women, and conscientiousness is rewarded only for women. Heineck and Anger (2010), using German Socio-Economic Panel survey data, find that extraversion and agreeableness negatively affect wages for women, consistent with the results of Nyhus and Pons (2005). They also report that openness to experience is rewarded for women but penalized for men, while men benefit from extraversion and conscientiousness. Gensowski (2018) use a high-IQ U.S. sample to estimate the effect of personality traits on lifetime earnings for both sexes. Their results show that extraversion and conscientiousness are strongly and positively associated with men’s lifetime earnings, while agreeableness is negatively associated. For women, the effects of these personality traits on earnings are weaker than those observed for men. Flinn et al. (2018) argue that personality traits may influence the gender pay gap in two ways. First, they affect market wage offers for men and women differently. Second, they influence the allocation of household time and resource allocation by shaping spouses’ utility and bargaining power.

In summary, most studies do not consistently support any particular relationship between personality traits and job performance or labor market outcomes. These associations often vary by occupation and cultural context, though the significance of extraversion appears to have grown in recent decades. This limited understanding is partly due to the fact that existing research does not shed light on the mechanisms through which personality traits affect career success. Our paper aims to shed light on these mechanisms.

3. Data

We use personnel records from a major business solutions firm, which we refer to as JMS.³ JMS employs roughly 5,500 individuals. The dataset contains key employee attributes, including gender, date of birth, educational background, marital status, and number of children, along with basic job-related information such as date of recruitment, job classification, and whether employees were hired as recent graduates or through mid-

³JMS is a pseudonym used to protect the firm’s identity.

career intake. Time-varying information is updated at the beginning of each fiscal year. The dataset also includes monthly working hours and whole records of talent management, including skill evaluation, mission grade, and performance ratings as we explain in detail below.

Skill evaluations are conducted biannually in March and August, with assessments carried out by both employees and their supervisors. The process assesses 12 distinct skills: applying structured reasoning to decisions (*logical thinking*); turning ideas into sustainable revenue streams (*monetization*); scanning trends and viewing issues from multiple perspectives (*broad perspective*); embracing diverse values and adapting flexibly to change (*receptivity*); inspiring vision and purpose (*visioning*); building trust through clear and empathetic interaction (*communication*); reaching agreements that balance diverse interests (*negotiation*); empowering individuals and fostering autonomy (*leadership*); motivating others and supporting growth through mentorship and feedback (*coaching*); coordinating tasks and resources to deliver results (*project management*); expanding opportunities for growth through partnerships and new markets (*business development*); building and leveraging networks across boundaries (*networking*). Most of these skills, interestingly, involve social interaction, whereas logical thinking and monetization place relatively little emphasis on this aspect.

Mission grade reflects the complexity and difficulty of an employee’s roles and tasks, ranging from 1 to 16, with higher values representing more challenging and complex assignments. Each February, employees negotiate their roles and responsibilities with their supervisors and receive a mission grade assignment. The salary for the upcoming fiscal year, which begins in April, is determined by this mission grade—employees with higher mission grades receive higher salaries.

Performance ratings are assigned each January for the preceding year, based on the achievement of key task goals. Ratings range from 1 to 7, reflecting the level of accomplishment, and they have a direct impact on the annual bonus.

The observation period spans five years, from 2020 to 2024, although skill evaluations are only available from 2022 to 2024. Below, we describe the key variables in our analysis—including detailed information on personality traits—explain how promotion outcomes are determined at the firm, and outline our sample restrictions.

3.1. Data on personality traits

A key strength of this dataset is its inclusion of aptitude test scores, which allow us to extract information on personality traits. The test, administered in 2023, provides data on 43 distinct personality traits. We applied factor analysis to group these traits into the five

major personality dimensions—commonly known as the Big Five: agreeableness (AGRE), extraversion (EXTR), neuroticism (NEUR), openness to experience (OPEN), and conscientiousness (CONS). Although prior research suggests that personality traits may evolve over the life cycle, they typically remain relatively stable after the mid-20s (Caspi and Roberts, 2001; Costa and McCrae, 1988; Costa Jr. and McCrae, 1994). Accordingly, since the youngest employee in the sample used in our baseline analysis is 26 years old, we can reasonably assume that personality traits did not change during our observation period, and we treat the 2023 aptitude test scores as time-invariant variables in our analysis. Each of the five major personality dimensions was standardized by subtracting the mean value and dividing by the standard deviation.

In Figure 1, we compare the distributions of each personality trait between men and women. Men score significantly higher in extraversion and lower in agreeableness compared to women, whereas women significantly higher in openness to experience. There are no significant gender differences in conscientiousness and neuroticism.⁴

3.2. How is promotion determined at the firm?

JMS evaluates its employees using three key components: (1) skill evaluations, which consist of both self-assessments and supervisor assessments conducted twice annually, in March and August; (2) assignment of roles and responsibilities, captured by the mission grade and determined each February; and (3) performance ratings, which are based on achievement of the previous year’s set goals and evaluated every January.⁵ Promotion decisions are primarily informed by mission grades and performance ratings. While skill evaluations do not directly determine promotions, employees’ perceived skills influence the roles and tasks they are assigned, thereby shaping their opportunities for advancement.

JMS organizes its workforce into three job classes: associate, professional, and principal. All new hires join as associates after graduating from college. Associates become eligible for promotion to the professional level once they meet certain criteria, at which point they begin leading projects. In practice, 98% of associates within the same cohort are promoted to the professional level in their fifth year (see Table A1).

⁴They are not representative of the general Japanese population. Studies using more broader samples, such as Lee and Ohtake (2018) and Yasui et al. (2020), show that women score significantly higher on average in extraversion, agreeableness and neuroticism, while men score higher in openness to experience.

⁵For skill evaluations, we use the March assessments because they closely coincide with the timing of mission grade determination. We also find that differences between the March and August assessments within the same year are minimal.

In contrast, advancement to the highest level—principal—requires professionals either to demonstrate the ability to manage high-responsibility tasks while consistently achieving strong performance or to accumulate sufficient experience as a middle manager over a defined period. Consequently, this study focuses on the probability of promotion to the principal level.

3.3. Sample Restriction

Since we only study promotion to the principal level, we limit our analysis to employees at the professional level, excluding those at the associate level who are not yet eligible for promotion to the principal level. We also exclude employees who were already at the principal level at the start of the dataset. Additionally, we limit our sample to employees who joined the firm before 2020, ensuring that we have at least five years of data for each individual. Due to these sample restrictions, our dataset comprises 2,562 employees and 10,925 person-year observations. The descriptive statistics are presented in Table 2.

4. Empirical Strategy

4.1. Baseline Model

To investigate the effect of employees’ personality traits on career progression, we estimate the following equations.

$$Y_{it} = \alpha + \beta Traits_i + X_{it}\nu + \delta_t + \lambda_{it} + \gamma_{s(i,t)} + \epsilon_{it} \quad (1)$$

Y_{it} represents career outcomes for individual i in year t , including promotion and performance ratings at the end of year t , as well as mission grades assessed at the beginning of year t . When the outcome is promotion, Y_{it} takes 1 if employee i is promoted from the professional level to the principal level at the end of year t , and 0 otherwise.⁶ When outcome is either mission grade or performance ratings, Y_{it} is treated as a continuous variable, ranging from 1 to 16 for mission grade, and from 1 to 7 for performance ratings, respectively. $Traits_i$ is a vector of the “Big Five” factor scores identified from the factor analysis of employees’ responses to personality test questions in the aptitude test. Each score was standardized by subtracting the mean and dividing by the standard deviation. X_{it} is a set of control variables measured at the beginning of year t , including employee gender, tenure, tenure squared, age, age squared, marital status, number of children, educational degree, and employment type (i.e., whether the employee is a new graduate or

⁶It is also equivalent to a promotion at the beginning of year $t + 1$.

mid-career hire). δ_t represents year fixed effects, while λ_{it} and $\gamma_{s(i,t)}$ denote fixed effects for the division and for the supervisor, respectively, where $s(i, t)$ is the supervisor for whom employee i works in period t . ϵ_{it} is an error term.

We control for division fixed effects to account for the possibility that employees with particular characteristics may be allocated to specific divisions, which could exhibit distinct promotion patterns. For example, extraverted employees may be placed in divisions that frequently interact with customers, and these divisions might also have higher promotion rates. Moreover, managers may not be randomly assigned with respect to employees' personality traits, and they also have a decisive influence on the promotion of their subordinates. For instance, good managers may be assigned to extraverted employees, and these managers could also positively influence their subordinates' career progression. Thus, we also include supervisor fixed effects in our regression to control for the potential non-random assignment of managers.

In our baseline estimation, We use ordinary least squares (OLS) but also conduct discrete choice models such as logit and ordered logit models as robustness checks. Standard errors are clustered at the employee level.

5. Results

5.1. Which personality traits predict promotion?

We first look at which personality traits are correlated with the incidence of promotion from the professional class to the principal class by estimating Equation 1. The results in Table 3 show two distinct and robust patterns. First, employees who are more extraverted are more likely to be promoted. Second, those who have higher scores on neuroticism have a lower chance of promotion. The coefficients remain unchanged as we add division fixed effects (column 2) and supervisor fixed effects (column 3), which seem to suggest that neither business characteristics nor manager characteristics are confounding the relationship.

Columns 4 and 5 show the same analysis with year fixed effects and division fixed effects using the logit model, confirming that our results are robust to the choice of regression model. The linear probability model is our preferred model because logit models cannot be estimated due to perfect prediction once we include supervisor fixed effects.

Next, we examine whether observed patterns differ by gender. First, the same analysis as in Table 3 is reported separately for male and female employees in columns 1-4 of Table 4. The earlier results for the full sample generally remain unchanged in terms of coefficient magnitudes in both male and female samples, except for conscientiousness, whose coefficient becomes significantly positive only for men. Men appear to receive a

higher return to conscientiousness than women. This finding is interesting because Flinn et al. (2018) also find that men have a higher wage return for being conscientious than women using Australian household data.⁷ The results for the pooled sample with gender interaction terms presents a similar pattern, as shown in columns 5-7.

As extraversion emerges as the most important predictor of promotion for both male and female samples, the gender difference in extraversion accounts for a substantial portion of the gender gap in promotion. In fact, the gender difference in extraversion score is 0.400 (t-statistics=17.66), which accounts for approximately 0.4 percentage point ($=0.400 \times 0.009$) of the gender gap in promotion. According to the Oaxaca decomposition reported in Table A2, of the total 2.1 percentage-point gender gap in promotion, 1.1 percentage points are explained by basic characteristics and personality traits, while the remaining 1.0 percentage point is attributed to unexplained factors. Gender differences in extraversion alone account for 0.4 percentage points of the explained portion, accounting for approximately 19% of the total gender difference in promotion probability.

5.2. *What mediate the effect of personality traits?*

As explained in Section 3, promotion decisions at JMS are based on mission grades and performance evaluations in accordance with company policy. To examine whether these two factors mediate the effect of personality traits on promotion, we include each in the baseline model defined by equation (1). The results are presented in Table 5. Column 1 replicates the specification from column 3 in Table 3, while column 2 adds mission grades and column 3 adds performance ratings as control variables, respectively. Notably, in column 2, all personality trait variables lose their explanatory power upon the inclusion of mission grade. In column 3, the coefficients for extraversion and neuroticism remain similar even after controlling for performance ratings. These results suggest that role and task assignment, as captured by mission grades, primarily mediates the effect of personality traits on promotion, whereas performance ratings do not. When both mission grades and performance ratings are included in column 4, the coefficient for performance rating becomes negative. This finding indicates that promotion decisions are not based on

⁷We do not control for supervisor fixed effects in this subsample analysis because doing so would lead to a greater loss of observations in the female sample than in the male sample. Note that there are far fewer female employees, and they are distributed more unevenly across divisions compared with male employees. Since supervisor fixed effects in the female sample are calculated based only on female subordinates, there will be more supervisors whose subordinates are dropped in the female sample. This raises two concerns. First, supervisor fixed effects would be estimated less precisely in the female sample. Second, the divisional composition could become distorted in the female sample.

short-term performance – i.e., the number of goals achieved – but rather on the managerial capacity and expertise that supervisors expect from each employee, as reflected in mission grades.⁸

Table 6 quantifies the mediating effects of mission grade and assesses its statistical significance using bootstrap methods. The results indicate that the direct effect of extraversion on promotion is insignificant, whereas the indirect effect through mission grades is significant. A similar pattern is observed for neuroticism. These findings suggest that mission grade largely mediates the relationship between personality traits and promotion.⁹

Next, we examine the correlation between personality traits and both mission grades and performance scores to identify which traits are important for receiving more important assignments or for improving performance. The results are shown in Table 7. Both extraversion and neuroticism are important predictors of role and task assignments and performance evaluation, as are in the analysis of their influence on promotion. In addition, a high level of conscientiousness leads to better performance.¹⁰ These findings suggest that while conscientiousness is essential for achieving goals, it may not be regarded as relevant to the managerial capacity required for responsibilities involving high complexity and broad influence.

5.3. Does separation matter?

A potential concern is whether the separation rate is correlated with Big Five personality traits. If separation is related to traits such as extraversion or neuroticism, our results may be biased. In particular, if extraverted workers are more likely to remain in the firm, this could confound our main results. To address this concern, we regress departure—an indicator variable equal to 1 if a worker leaves the firm and 0 otherwise—on the Big Five

⁸This result may be interpreted as a counterexample to the Peter Principle, which suggests that firms may inadvertently promote high performers who lack managerial capability, leading to inefficiency (Asuyama and Owan, 2024).

⁹Table A3 further quantifies the mediating role of mission grade by comparing the R-squared values from four regressions. The R-squared increases from 0.1633 to 0.1658 when personality traits are added to the baseline model with control variables ($CV \rightarrow CV + \text{personality}$), reflecting the total effect of personality on promotion. When mission grades are included, the R-squared rises only slightly from 0.2363 to 0.2367 ($CV + \text{mission} \rightarrow CV + \text{mission} + \text{personality}$), indicating that the direct effect of personality is much smaller (0.0004 vs. 0.0025). These results suggest that the direct effect of personality traits becomes negligible once mission grade is accounted for, with the indirect effect explaining more than 80% of the relationship between personality and promotion.

¹⁰We also present the results of the same analysis using an ordered logit model in Table A4. The results remain robust to this alternative specification.

personality traits.

Columns 1 and 3 of Table 8 report the results. Workers high in openness to experience are more likely to leave the firm, a pattern that appears to be concentrated among employees in the principal job class. By contrast, extraversion and neuroticism are not significantly associated with departure. We also include interactions between skill evaluations and personality traits in the regression. Columns 2 and 4 of Table 8 report the results. It can be found that highly capable extraverted workers are more likely to leave the firm, which suggests that our main results may be biased downward.

5.4. Is promoting extraverts efficient?

In this subsection, we assess whether promoting extraverts represents an efficient, productivity-based decision by examining their post-promotion performance. Specifically, we regress performance ratings on personality traits for employees in the principal class, with a particular focus on those who were promoted from the professional to the principal class during the observation period. If extraversion is the strongest predictor of performance in managerial positions, promoting employees with high extraversion scores should be considered an efficient, productivity-based decision. One caveat is that OLS estimates based on the sample of principals may be biased due to selection effects. Even if extraversion predicts performance, employees promoted despite low extraversion scores may possess other skills or traits that are unobservable to researchers but enhance managerial effectiveness. To address this potential bias, we also report estimation results from Heckman’s selection model.

The OLS results using the full principal sample, reported in columns 1-3 of Table 9, show that extraversion is most strongly correlated with both mission grade and performance for principals but the coefficient magnitudes are comparable to those estimated for the professional sample, shown in Table 7. The coefficients also turn to insignificant when we restrict the sample to newly promoted principals, although the magnitude of the coefficient of extraversion on performance is greater than in the whole sample (columns 4-6). The loss of statistical significance may be due to the reduction in sample size. The coefficients could also be underestimated due to the selection bias. Thus, Heckman’s selection models are estimated in columns 7-10 using the share of principals older than 55 in the division in the previous year as an excluded variable. We assume that professionals in divisions with a higher share of principals nearing retirement age have greater opportunities for promotion, and that the share of older principals in a division in the previous year should have no effect on the subsequent performance of principals who get

recently promoted. The Heckman correction of selection bias does not necessarily change the coefficients of extraversion for the performance equation (columns 9-10).

Those coefficients are economically meaningful relative to the predictive power of extraversion for promotion. A one-standard deviation (SD) increase in extraversion raises the probability of promotion by 0.9 percentage points, approximately 20% of the sample mean promotion rate (4.6%). By comparison, a one-SD increase in extraversion increases a principal’s performance evaluation score by 4.2-8.8% of its SD. Under the assumption that the performance evaluation scores are normally distributed, a back-of-the-envelope calculation implies that such an improvement would raise the promotion probability by 0.4-0.9 percentage points—equal or only moderately smaller than the observed correlation between extraversion and promotion. Thus, we cannot rule out the possibility that the promotion advantage of extraverts is driven entirely by productivity considerations. Nevertheless, factors beyond productivity may also play a role in promotion decisions. In the next subsection, we examine the mechanisms through which extraversion affects promotion outcomes.

5.5. Why does extraversion play an important role in promotion decisions

We now focus on the role of extraversion in generating a positive correlation with mission grade—the primary mediator of personality traits’ effect on promotion—for employees in the professional class. To investigate this mechanism, we propose to test the following three hypotheses.

Hypothesis 1. *Supervisors misattribute extraverts’ self-promotion as evidence of ability.*

Schaefer (2004) show that extraversion significantly predicts overconfidence. If this holds in our data, extraversion may simply serve as a proxy for self-promotion driven by overconfidence. By actively promoting their abilities and motivation, overconfident individuals may increase their chances of receiving more responsibility and challenging assignments, which in turn help develop their skills more quickly.

Hypothesis 2a. *Extraverts tend to develop high interpersonal skills quickly.*

Hypothesis 2b. *Extraverts tend to possess high interpersonal skills initially.*

Deming (2017) reports that, as jobs requiring high levels of social interaction grew, the return to social skills that reduce coordination costs increased substantially over the past few decades. Hansen (2021) also show an increasing relevance of social skills in top managerial occupations, whose major role is coordinating activities, using a large corpus

of job descriptions for top executive positions provided by a global executive search firm. If extraverts develop or have higher social skills than introverts, they should be better suited to learning coordination capabilities, which in turn allow them to receive more responsibility and get promotion.¹¹

Hypothesis 3. *Extraverts are advantaged in building relationships with supervisors who make assignment decisions.*

Asendorpf and Wilpers (1998) shows that extraverts actively seek and enjoy interacting with others. If they are better at interacting with supervisors than introverts, this can also foster favoritism, build trust, and reduce communication costs, which in turn enables extraverts to take on more responsibility.

5.5.1. *Are extraverts successfully self-promoting?*

If extraverts self-promote successfully, it is very likely to be driven by overconfidence (Schaefer, 2004). In order to test it, we use the difference between self-evaluation and supervisor-evaluation in the skills assessment. At JMS, all employees self-evaluate their 12 core skills. After the self-evaluation, their superiors also evaluate their subordinates' skills in the same way. Employees who are overconfident tend to overestimate their own skills, so the difference between self-evaluation and supervisor evaluation should be larger for such individuals.¹² However, the raw difference is noisy because it captures supervisor-specific and time-specific factors. For example, a strict supervisor may systematically assign lower scores than a lenient one, and workers' skill development and their supervisors' evaluations may depend on the business cycle. Thus, we measure overconfidence as a time-invariant scale after extracting supervisor and time fixed effects.

Table 10 shows the result of regressing the overconfidence scale on Big Five personality traits. As predicted, extraversion is most strongly correlated with overconfidence. Overconfidence is also significantly positively correlated with disagreeableness, emotional stability, openness and conscientiousness.

We then estimate how overconfidence correlates with mission grades. The results, presented in Table 11, show that overconfidence is negatively correlated with mission grades for all specifications in columns 1-4. The last four columns report regression results

¹¹Furthermore, based on a meta-analysis, Bono and Judge (2004) conclude that extraversion is the strongest and most consistent correlate of transformational leadership.

¹²The self-evaluation score is calculated as the average score across 12 skills evaluated by the worker, while the supervisor-evaluation score is calculated as the average score of the same skills evaluated by the supervisor.

of mission grades on four categorical variables of overconfidence, defined by quartiles. The reference group is the first quartile, i.e., individuals whose overconfidence is below the 25th percentile. The results also indicate that any level of confidence exceeding the first quartile is not beneficial for receiving more responsibility.

One problem with this analysis is that the current supervisor’s assessment of a focal employee influences both the overconfidence measure of the employee and their role and task assignments, potentially confounding the results. To address this endogeneity concern, we estimate a 2SLS model using the average difference between self-evaluations and supervisor evaluations under other supervisors as the instrumental variable. The results, presented in Table A5, yield qualitatively similar findings—overconfident subordinates tend to be assigned less important tasks. These results contradict our expectation that overconfident individuals, being adept at self-promotion, would secure more responsibilities and developmental assignments.

Even if overconfidence is not the main mediator of the relationship between extraversion and mission grade, self-promotion by extraverts may still be the primary mechanism. Because self-promotion is likely more influential when the supervisor is less informed, we estimate the mission grade regression with an interaction term between a binary indicator of whether the supervisor is less informed and the employee’s extraversion score. We define a supervisor as less informed if she is “new” to her subordinates and has spent less than one year with them. Table 12 reports the results. Contrary to our prediction, we find that the effect of extraversion on mission grades is greater when the supervisor is more informed. Therefore, supervisors may not be misled by extraverted subordinates when they are less informed.

Therefore, while we confirm that extraversion is significantly correlated with overconfidence, we do not find results consistent with the hypothesis that overconfidence and the self-promotion it induces lead to taking on greater responsibility.

5.5.2. Do extraverts develop high interpersonal skills or possess high interpersonal skills at the beginning?

Prior studies imply that extraverts may tend to have high interpersonal skills, which allow them to acquire coordination capabilities. So, we examine whether extraverts have higher skill evaluations and whether higher skill evaluations are correlated with greater responsibility. We use the average score of the 12 skills rated by supervisors as a proxy for interpersonal skill because most of the 12 skills involve social interactions, as previously discussed.

Column 1 of Table 13 reports the OLS results of regressing the skill evaluation on

personality traits.¹³ According to the table, extraversion has a positive and the largest coefficient, nearly twice as large as the second-largest coefficient corresponding to neuroticism, indicating that extraverts tend to be good at interpersonal skills.

We next show that those skills mediate the effect of big five personality traits on the mission grade. Columns 2-3 of Table 13 present how the correlation between personality traits and mission grades changes when the skill evaluation score is added to the explanatory variables. The specification in column 2 is the same as in column 1 of Table 7, except that here we restrict the sample to 2022–2024, which is the observation period for skill evaluations. In the last column, we additionally include skill evaluations as control variables. We observe that skill evaluations are significantly positively associated with mission grades and that the significant coefficients of extraversion and neuroticism are substantially reduced once skill evaluations are controlled for. The results suggest that skill evaluations mediate the effect of extraversion on mission grades.

We examine whether the mediating effect of skill evaluations is statistically significant using bootstrap methods. As shown in Table A7, the direct effect of extraversion on mission grades is not significant, while the indirect effect through skill evaluations is significant. A similar pattern is observed for neuroticism, indicating that skill evaluations fully mediate the relationship between personality traits and mission grades.¹⁴

Finally, we investigate whether extraverted individuals acquire skills more rapidly than introverted ones and/or begin their careers with higher initial skill levels. Because employees start developing interpersonal skills during their associate period (i.e., the early stage of their careers), we include both associates and principals in our sample to assess the skill learning effect of extraversion.

We first examine how skill evaluations evolve with tenure for extraverted and intro-

¹³We also conduct a factor analysis of these 12 skills and extract a single principal factor. In unreported analyses, we employ the principal factor of these 12 skills as an alternative measure, and all results remain quantitatively unchanged. In addition, Table A6 shows the correlation between big five scores and each of the twelve core skills. Big five scores and all of the twelve core skills are standardized so that the mean is zero and the standard deviation is one.

¹⁴Table A8 reports the R-squared values from four regressions. The first two R-squared values, 0.5332 and 0.5423, are from the regression including only control variables and the one additionally controlling for personality traits. The difference between these two values reflects the total effect of personality traits on mission grades. The last two R-squared values, 0.6554 and 0.6567, are from the regression including only skill evaluations and the one including both skill evaluations and personality traits. The difference in R-squared between the latter two regressions suggests that, once skill evaluations are accounted for, the direct effect of personality traits on mission grades is minimal.

verted workers in Figure 2. We classify workers as highly extraverted if their extraversion scores are above the sample mean, and as low extraverted otherwise. The figure shows that highly extraverted workers initially possess higher interpersonal skills. However, it does not provide strong evidence that the skill gap between extraverts and introverts widens with tenure.¹⁵

Then, we run regressions using the full sample and estimate Heckman’s selection model to address potential selection bias arising from promotion to the principal class and employee turnover (i.e. higher-skilled employees are more likely to be promoted and retained). The excluded variable is the same as that used in Table 9—the share of principals aged 55 or older in the division in the previous year.

Table 14 reports the regression results for determinants of skill evaluations. To investigate whether extraverts learn skills faster, we include interactions between tenure and extraversion, as well as between tenure squared and extraversion. To control for unobserved ability, worker fixed effects are included in Columns 2, 4 and 7. The first four columns present OLS results for both the full sample (including associates, professionals, and principals) and the subsample of associates and professionals only. None of the interaction terms are significantly positive, suggesting that employees with higher extraversion scores do not learn faster than those with lower scores. The coefficient on *Extraversion* reflects the initial skill level when *tenure* = 0; it is positive and significant in column 1 but not in column 3. Because the estimates in column 3 may be affected by selection bias, columns 5–7 present the results from the Heckman’s selection model. After correcting for sample selection, extraversion is significantly positively associated with skill evaluations among associates and professionals.

In summary, Hypothesis 2a is rejected while Hypothesis 2b is supported. Extraverts do not necessarily acquire skills more rapidly, but they appear to possess higher interpersonal skills from the outset. These skills enable them to assume greater responsibilities and, consequently, achieve promotion.

5.5.3. *Are extraverts advantaged in building relationships with supervisors?*

The final question is whether extraverts have an advantage in building their relationships with their supervisors and, as a result, are more likely to receive favorable treatment from them.

To address this question, we examine whether extraverts particularly benefit from

¹⁵In the Appendix, we also present how mission grades evolve with tenure for extraverted and introverted workers in Figure A1.

spending many years working with the same supervisor. In estimating the determinants of mission grade and skill evaluation—using models similar to those in Table 13—we include the number of years an employee has worked with their current supervisor and its interaction with the employee’s extraversion score. Note that employee age and tenure are already controlled for. If extraverts are more adept at engaging with supervisors, we would expect them to build stronger relationships with their supervisors over time.

Table 15 presents the results. The interaction term is positive and statistically significant across all specifications for mission grades (columns 1-2), even after controlling for worker time-invariant heterogeneity. In columns 3-6, we restrict the sample of mission grades to 2022–2024, the period for which skill evaluations are available. The positive and significant coefficients on the interaction term for mission grades remain robust after including worker fixed effects and skill evaluations. In contrast, the interaction term is insignificant in the skill evaluation regressions, suggesting that extraverts do not necessarily acquire skills more quickly simply by spending more years with their supervisors. In summary, extraverts tend to develop stronger relationships with their supervisors as their co-working experience lengthens and, as a result, are entrusted with greater responsibility.

We also exploit supervisor rotation to examine the effects of losing a strong relationship with one’s supervisor. If extraverted workers tend to develop closer relationships with their supervisors, they may be more negatively affected by the loss of an incumbent supervisor. A potential concern is the exogeneity of supervisor rotation. According to JMS, supervisor rotation is random. We further test this by regressing supervisor rotation on a set of worker characteristics. Table A9 shows that, conditional on year and division fixed effects, supervisor rotation is not correlated with workers’ observable characteristics. This result supports the exogeneity of supervisor rotation.

We then include lagged supervisor rotation and its interaction with the employee’s extraversion score in specifications similar to those in Table 13. Table 16 reports the results. The interaction between supervisor rotation and the employee’s extraversion score is statistically negative across all specifications for mission grades in Columns (1)–(6). This indicates that the loss of a former supervisor has a more negative effect on extraverted workers. This finding is consistent with the results in Table 15 and further supports Hypothesis 3, which posits that extraverted workers tend to build stronger relationships with their supervisors.

A remaining question is whether this pattern arises from factors unrelated to productivity—such as favoritism or trust—in addition to productivity-related considerations like reduced communication costs, which we identified as influential in Tables 9, 13, 14. To explore

this, we examine how a supervisor’s performance is associated with the average extraversion of her subordinates, the average number of years they have worked together, and the interaction between the two.

Table 17 presents the results. After controlling for supervisor fixed effects, neither the average extraversion scores of subordinates, the average number of years worked together, nor their interaction has a significant effect on supervisors’ performance. This suggests that the positive association between years spent with supervisors and mission grades for extraverts may stem from supervisors’ preferential treatment, possibly driven by trust and favoritism toward these subordinates.

In summary, extraverts appear to be advantaged in building relationships with supervisors. As they spend more time working together, these relationships strengthen, fostering trust and favoritism that, in turn, lead to greater developmental stretch assignments.

6. Conclusions

We examine the effect of personality traits on career advancement using personnel data from a Japanese business solutions firm. Our findings provide valuable insights into the relationship between personality traits and promotions, as well as the mediating and moderating factors influencing this relationship.

Our findings indicate that employees with higher levels of extraversion are more likely to be promoted, whereas those with higher scores in neuroticism have a lower chance of promotion. These results hold true even after accounting for division and supervisor fixed effects, highlighting the significant impact these personality traits have on career progression. Gender differences further reveal that men tend to score higher in extraversion compared to women, which helps explain the gender gap in promotions since extraversion is a key predictor for promotion.

Role and task assignments primarily mediate the relationship between personality traits and promotions. Employees with higher mission grades—reflecting more complex responsibilities—are more likely to be promoted. In contrast, performance evaluations do not exhibit a statistically significant mediating effect, underscoring that supervisors place greater weight on employees’ long-term managerial potential and capacity than short-term performance.

To investigate the mechanisms underlying these findings, we further examine why extraversion plays an important role in promotion decisions. Specifically, we test three hypotheses: (1) extraverts tend to be overconfident and self-promote, thereby taking on more responsibilities (H1); (2) extraverts either develop interpersonal skills quickly (H2a)

or possess them from the outset (H2b); and (3) extraverts are advantaged in building relationships with supervisors who make assignment decisions (H3). Our results support only H2b and H3. These findings suggest that the observed correlation between extraversion and promotion reflects the influence of both productivity-related and non-productivity factors.

Our study highlights the significant role of personality traits in career advancement, underscoring the importance of considering these traits alongside traditional human capital factors. The findings have implications for human resource practices, advocating for a more nuanced approach to hiring, training and promotion decisions. For example, while interpersonal skills are increasingly important—especially in roles requiring information aggregation and coordination—social ties, which extraverts are better able to develop, may also introduce bias in promotion decisions. This indicates a potential need for mechanisms to mitigate such bias, such as team-based promotion decisions, limited supervisor discretion in assigning responsibilities, and more gender-neutral approaches to role and task allocation.

Our findings, based on a single project-based business solutions firm where higher positions involve frequent client interaction, may raise concerns about external validity. However, similar environments are common among knowledge-based organizations. Because extraversion enhances interpersonal skills that facilitate career advancement, the underlying mechanism likely generalizes beyond our setting—though the effect may be weaker in firms with limited external interaction. The relational advantage of extraverts in building and maintaining workplace relationships is thus expected to characterize diverse organizational contexts. Future research should examine these dynamics across different industries and cultural contexts and explore additional mediating and moderating factors to better understand how personality traits shape career success.

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Figure 1: Distribution of personality traits by gender

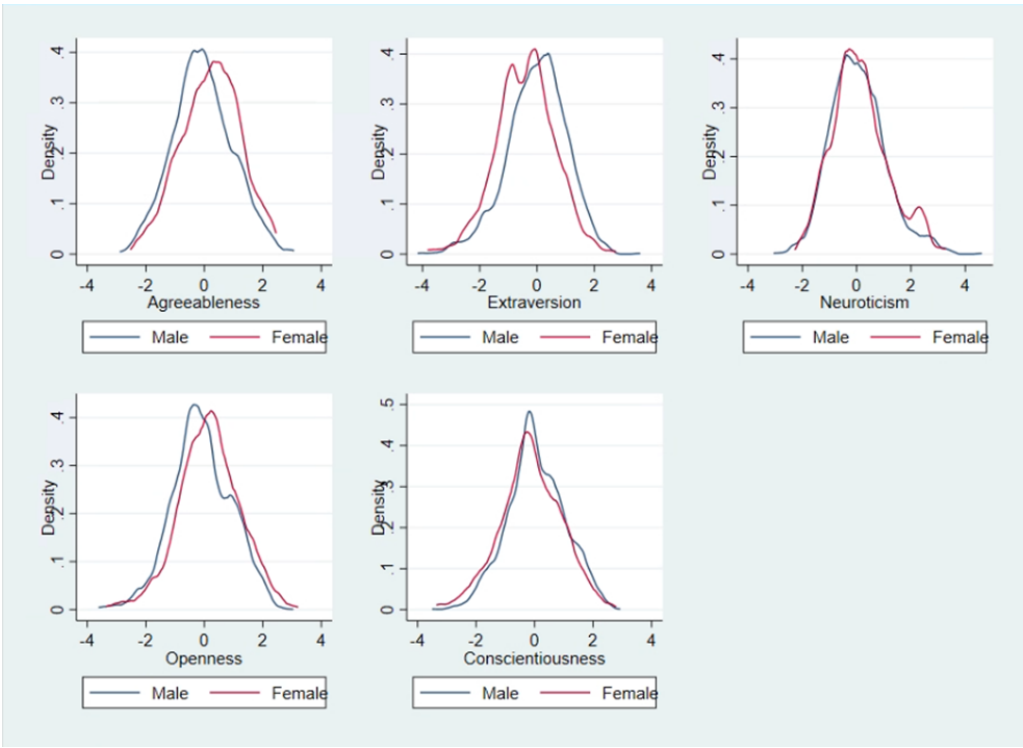
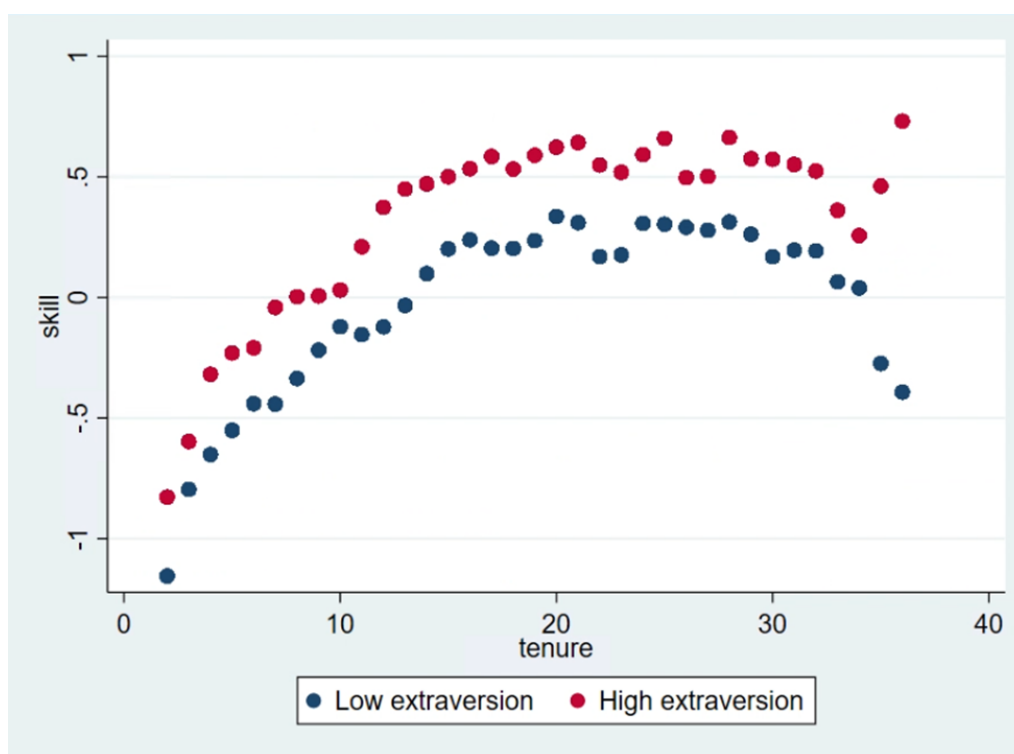


Figure 2: Skill evaluations by tenure



Notes: Workers are classified as highly extraverted if their extraversion scores are above the sample mean, and as low extraverted otherwise.

Table 1: Prior Studies

References	Extraversion	Agreeableness	Neuroticism	Openness	Conscientiousn.	Outcomes*8	Sample
Barrick and Mount (1991)	+*1				+	job proficiency, training proficiency, personnel data	Meta-analysis
Salgado (1997)	+*1		-		+	job performance	Meta-analysis
Seibert and Kraimer (2001)	+			-*2		wage, promotions	US
Ng et al. (2005)	+		-*3	+*2	+*2	wage, promotions	Meta-analysis
Nyhus and Pons (2005)	-*4	-*4	-		+	wage	Netherland
Mueller and Plug (2006)		-*5	-*5	+	+*4	earnings	US
Heckman et al. (2006)	+*1					wage	US
Judge and Kammeyer-Mueller (2007)	+	-			+	wage, promotion	Survey
Heineck and Anger (2010)	-*4 +*5	-*4		+*4 -*5	+*5	earnings	Germany
Lee and Ohtake (2018)	+*5	+*6 -*7				earnings	Japan/US
Finn et al. (2018)		-*4			+*4	wage	Australia
Gensowski (2018)	+*5	-*5			+*5	earnings	US
Wilmot et al. (2019)	+					performance in job application, on the job, & career	Meta-analysis
Yasui et al. (2020)	+		-			wage	Japan

Notes: *1 The result holds for occupations that require a high level of human interactions such as managers; *2 The result holds only for salary level as the outcome; *3 The result holds only for promotion as the outcome; *4 The result holds for the female sample; *5 The result holds for the male sample; *6 The result holds for the Japanese sample; *7 The result holds for the US sample. *8 Some studies examine relationships with subjective outcome such as job satisfaction. We do not include them here.

Table 2: Summary Statistics

VARIABLES	N	mean	sd	min	max
Agreeableness	10,925	0.0147	1.028	-2.888	3.073
Extraversion	10,925	-0.111	1.048	-4.168	3.604
Neuroticism	10,925	0.0719	1.026	-3.055	4.612
Openness	10,925	-0.0216	1.034	-3.615	3.207
Conscientiousness	10,925	0.00772	1.009	-3.502	2.927
Promotion	10,925	0.0460	0.210	0	1
Performance	10,856	5.316	0.814	1	7
Mission	10,925	7.767	2.787	1	16
Skill evaluation	4,569	0.0435	0.771	-3.797	2.412
Female	10,925	0.255	0.436	0	1
Tenure	10,925	13.39	6.592	0	37
Age	10,925	39.04	6.415	26	58
Married	10,925	0.720	0.449	0	1
Number of children	10,925	0.942	0.942	0	5
Bachelor	10,925	0.981	0.137	0	1
Master	10,925	0.0107	0.103	0	1
Under Bachelor	10,925	0.00851	0.0919	0	1
Mid-term	10,925	0.213	0.409	0	1
New Graduate	10,925	0.787	0.409	0	1

Notes: Agreeableness, Extraversion, Neuroticism, Openness, Conscientiousness, and skill evaluations (i.e., the average skill scores evaluated by supervisors) are all standardized.

Table 3: The effect of personality traits on promotion

	OLS			Logit	
	(1)	(2)	(3)	(4)	(5)
Agreeableness	0.001 (0.72)	0.002 (1.04)	0.002 (0.85)	0.000 (0.25)	0.001 (0.66)
Extraversion	0.010*** (5.16)	0.010*** (5.08)	0.009*** (4.17)	0.011*** (5.31)	0.012*** (5.33)
Neuroticism	-0.005*** (-2.85)	-0.006*** (-3.17)	-0.006*** (-2.96)	-0.007*** (-2.97)	-0.007*** (-3.39)
Openness	0.004** (2.01)	0.004** (2.10)	0.004 (1.64)	0.004* (1.92)	0.005** (2.12)
Conscientiousness	0.004** (2.21)	0.004* (1.93)	0.003 (1.41)	0.004* (1.85)	0.004* (1.84)
female	-0.010** (-2.44)	-0.009** (-2.06)	-0.009* (-1.83)	-0.011** (-2.19)	-0.010* (-1.81)
tenure	0.006*** (4.00)	0.006*** (4.03)	0.006*** (3.36)	0.005** (2.40)	0.005** (2.48)
tenure squared	-0.000* (-1.82)	-0.000* (-1.71)	-0.000 (-1.03)	-0.000 (-0.75)	-0.000 (-0.74)
age	0.038*** (10.83)	0.038*** (10.58)	0.038*** (8.79)	0.105*** (9.96)	0.113*** (10.18)
age squared	-0.000*** (-10.39)	-0.000*** (-10.13)	-0.000*** (-8.34)	-0.001*** (-9.48)	-0.001*** (-9.65)
married	-0.006 (-1.36)	-0.007 (-1.39)	-0.004 (-0.81)	-0.002 (-0.32)	-0.003 (-0.40)
number of children	0.008*** (3.00)	0.009*** (3.30)	0.009*** (2.78)	0.006** (2.46)	0.007*** (2.83)
Bachelor	0.007 (0.40)	0.007 (0.40)	0.022 (1.13)	0.009 (0.27)	0.007 (0.19)
Master	0.017 (0.65)	0.013 (0.48)	0.022 (0.77)	0.018 (0.44)	0.011 (0.27)
New Graduate	-0.020** (-2.30)	-0.022** (-2.45)	-0.019* (-1.81)	-0.013* (-1.65)	-0.014 (-1.59)
Year FE	Yes	Yes	Yes	Yes	Yes
Div FE	No	Yes	Yes	No	Yes
Supervisor FE	No	No	Yes	No	No
Observations	10,925	10,919	10,815	10,925	10,400
R-squared / Pseudo R ²	0.035	0.052	0.166	0.136	0.171

Notes: The dependent variable is *Promotion*, which takes the value 1 if employee i is promoted from the professional level to the principal level at the end of year t , and 0 otherwise. Marginal effects are presented in logit models. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: The effect of personality traits on promotion by gender

	Male		Female		Pooled	
	(1)	(2)	(3)	(4)	(5)	(7)
Agreeableness	0.002 (1.02)	0.003 (1.32)	-0.001 (-0.37)	0.000 (0.07)	0.002 (1.09)	0.003 (1.05)
Extraversion	0.011*** (4.69)	0.011*** (4.70)	0.006* (1.86)	0.008** (2.18)	0.011*** (4.70)	0.009*** (3.65)
Neuroticism	-0.005** (-2.17)	-0.006** (-2.47)	-0.007** (-2.18)	-0.008** (-2.55)	-0.005** (-2.22)	-0.005* (-1.90)
Openness	0.004 (1.62)	0.005* (1.92)	0.003 (0.80)	0.002 (0.73)	0.004* (1.71)	0.005* (1.71)
Conscientiousness	0.006** (2.56)	0.007** (2.57)	-0.001 (-0.23)	-0.001 (-0.46)	0.006*** (2.62)	0.006** (2.07)
Female × Agreeableness					-0.004 (-1.15)	-0.003 (-0.61)
Female × Extraversion					-0.004 (-1.04)	-0.002 (-0.54)
Female × Neuroticism					0.000 (-0.08)	-0.006 (-1.28)
Female × Openness					-0.001 (-0.35)	-0.004 (-1.01)
Female × Conscientiousness					-0.007* (-1.85)	-0.009* (-1.91)
Female × age					-0.025*** (-4.49)	-0.027*** (-4.02)
Female × age squared					0.000*** (4.37)	0.000*** (3.95)
CV	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Div FE	No	Yes	No	Yes	No	Yes
Supervisor FE	No	No	No	No	No	Yes
Observations	8,137	8,132	2,788	2,781	10,925	10,815
R-squared	0.036	0.054	0.035	0.101	0.036	0.167

Notes: The dependent variable is *Promotion*, which takes the value 1 if employee *i* is promoted from the professional level to the principal level at the end of year *t*, and 0 otherwise. Columns (1)-(2) present the results for male sample, while columns (3)-(4) report the results for female sample. Columns (5)-(7) show the results for pooled sample. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5: The effect of personality traits on promotion: mediation

	(1)	(2)	(3)	(4)
Agreeableness	0.002 (0.85)	0.003 (1.41)	0.002 (0.84)	0.003 (1.29)
Extraversion	0.009*** (4.17)	0.002 (1.11)	0.009*** (4.05)	0.003 (1.28)
Neuroticism	-0.006*** (-2.96)	-0.002 (-0.79)	-0.006*** (-2.88)	-0.002 (-0.88)
Openness	0.004 (1.64)	0.003 (1.27)	0.004 (1.60)	0.003 (1.32)
Conscientiousness	0.003 (1.41)	0.001 (0.59)	0.003 (1.30)	0.001 (0.69)
Mission		0.031*** (23.74)		0.031*** (23.23)
Performance			0.005* (1.85)	-0.009*** (-3.10)
CV	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes
Supervisor FE	Yes	Yes	Yes	Yes
Observations	10,815	10,815	10,746	10,746
R-squared	0.166	0.237	0.166	0.238

Notes: The dependent variable is *Promotion*, which takes the value 1 if employee i is promoted from the professional level to the principal level at the end of year t , and 0 otherwise. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Mediation analysis: Direct and indirect effects of Extraversion and Neuroticism on promotion (Bootstrap method with 500 replications)

Effect	Coefficient	S.E.	Bootstrap 95% CI
<i>Extraversion</i>			
Total effect	0.010***	0.002	(0.006, 0.014)
Direct effect	0.002	0.002	(-0.002, 0.006)
Indirect effect	0.008***	0.001	(0.007, 0.009)
<i>Neuroticism</i>			
Total effect	-0.005***	0.002	(-0.009, -0.001)
Direct effect	-0.000	0.002	(-0.003, 0.003)
Indirect effect	-0.005***	0.001	(-0.006, -0.004)

Notes: The dependent variable is *Promotion*, and the mediating variable is *Mission*. The control variables are the same as those in Table 3. *** $p < 0.01$. Estimates based on bootstrap standard errors.

Table 7: The effect of personality traits on mission grade and performance evaluation

	Mission	Performance	
	(1)	(2)	(3)
Agreeableness	-0.032 (-0.82)	-0.017* (-1.68)	-0.015 (-1.58)
Extraversion	0.217*** (5.87)	0.054*** (5.58)	0.040*** (4.45)
Neuroticism	-0.156*** (-4.39)	-0.038*** (-3.82)	-0.028*** (-2.97)
Openness	0.036 (1.01)	0.018* (1.82)	0.015* (1.68)
Conscientiousness	0.064 (1.64)	0.037*** (3.64)	0.033*** (3.44)
Mission			0.062*** (12.95)
CV	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Div FE	Yes	Yes	Yes
Supervisor FE	Yes	Yes	Yes
Observations	10,815	10,746	10,746
R-squared	0.577	0.303	0.322

Notes: The dependent variable in column (1) is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The dependent variable in columns (2)–(3) is *Performance*, which is scored from 1 to 7, with higher values indicating better performance. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8: Separation analysis

	Whole sample (AC+PC+SP)		AC+PC	
	(1)	(2)	(3)	(4)
Agreeableness	-0.001 (-1.46)	-0.002 (-0.98)	-0.002* (-1.79)	-0.004* (-1.91)
Extraversion	0.000 (0.05)	-0.001 (-0.46)	-0.001 (-1.45)	-0.000 (-0.23)
Neuroticism	0.000 (0.35)	0.002 (1.21)	-0.001 (-0.65)	-0.000 (-0.20)
Openness	0.002** (2.54)	0.003 (1.49)	0.001 (0.73)	-0.000 (-0.01)
Conscientiousness	0.000 (0.08)	-0.002 (-0.80)	-0.000 (-0.34)	-0.001 (-0.39)
Skill Evaluation		0.002 (0.61)		0.001 (0.18)
Agreeableness×Skill Evaluation		-0.001 (-0.39)		-0.002 (-0.68)
Extraversion×Skill Evaluation		0.005** (2.11)		0.006** (2.07)
Neuroticism×Skill Evaluation		-0.002 (-0.87)		-0.005* (-1.69)
Openness×Skill Evaluation		0.004 (1.60)		0.003 (0.95)
Conscientiousness×Skill Evaluation		0.001 (0.31)		-0.002 (-0.54)
Year FE	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes
Worker FE	No	No	No	No
Observations	19,674	9,244	13,030	5,757
R-squared	0.160	0.198	0.152	0.216

Notes: The dependent variable is *Departure*, which is a dummy variable equal to 1 if the worker leaves the firm during the observation period, and 0 otherwise. Columns (1)–(2) report the results for the whole sample, including associates, professionals, and principals, while columns (3)–(4) report the results for associates and professionals only. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9: The effect of personality traits on mission and performance for principals

	OLS					Heckman				
	All principals		Newly promoted		1st stage	2nd stage		Mission	Performance	
	Mission	Performance	Mission	Performance		New Prm	Performance			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Agreeableness	-0.090** (-2.21)	-0.016 (-1.17)	-0.011 (-0.84)	-0.020 (-0.39)	0.011 (0.24)	0.012 (0.25)	0.127** (2.65)	0.034 (0.67)	0.007 (0.11)	0.006 (0.09)
Extraversion	0.158*** (3.66)	0.043*** (3.12)	0.034** (2.57)	0.072 (1.63)	0.071 (1.35)	0.069 (1.31)	-0.062 (-1.26)	0.042 (0.93)	0.073 (1.40)	0.072 (1.37)
Neuroticism	-0.157*** (-3.80)	-0.030** (-2.18)	-0.021 (-1.58)	0.018 (0.35)	-0.015 (-0.27)	-0.015 (-0.28)	0.021 (0.42)	0.020 (0.41)	-0.015 (-0.28)	-0.016 (-0.29)
Openness	0.071* (1.78)	0.006 (0.46)	0.002 (0.18)	-0.059 (-0.98)	0.038 (0.73)	0.039 (0.77)	-0.008 (-0.16)	-0.065 (-1.08)	0.038 (0.74)	0.040 (0.79)
Conscientiousness	0.026 (0.65)	0.032** (2.48)	0.030** (2.42)	0.023 (0.50)	0.045 (0.96)	0.044 (0.95)	0.033 (0.67)	0.041 (0.91)	0.043 (0.88)	0.042 (0.86)
mission			0.057*** (7.55)			0.027 (0.54)				0.029 (0.58)
Lagged SP 55 share							8.602*** (6.05)			
Inverse Mills ratio								0.854*** (2.69)	-0.075 (-0.19)	-0.100 (-0.24)
CV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	6,421	6,414	6,414	789	789	789	5,303	789	789	789
R-squared	0.631	0.338	0.346	0.717	0.535	0.535	0.349	0.722	0.535	0.535

Notes: Columns (1)–(6) present the OLS results, where columns (1)–(3) report the results for all principals and columns (4)–(6) report the results for principals promoted during the observation period. Columns (7)–(10) present the Heckman selection model. Column (7) presents the first-stage probit regression results for all principals, where the dependent variable is a binary indicator equal to 1 if a principal was promoted during the observation period and 0 if the promotion occurred before the observation period. Columns (8)–(10) report the second-stage results after adding the inverse Mills ratio for principals who are promoted during the observation period. The excluded variable, *Lagged SP 55 share*, represents the share of principals in the division who are older than 55 in the previous year. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on principal-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10: The correlation between personality traits and overconfidence (time-invariant)

	(1)	(2)
Agreeableness	-0.081*** (-3.76)	-0.121*** (-5.81)
Extraversion	0.170*** (6.86)	0.243*** (10.07)
Neuroticism	-0.061** (-2.53)	-0.093*** (-4.15)
Openness	0.106*** (4.92)	0.137*** (6.57)
Conscientiousness	0.052** (2.19)	0.078*** (3.45)
Supervisor evaluation		-0.437*** (-13.07)
Observations	4,464	4,464
R-squared	0.102	0.192

Notes: The dependent variable is *Overconfidence*, which is measured as the time-invariant scale after extracting supervisor and time fixed effects from the regression of the difference between workers' self-evaluations and their supervisors' evaluations. The self-evaluation score is calculated as the average across 12 skills rated by the worker, while the supervisor-evaluation score is calculated as the average of the same skills rated by the supervisor. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 11: The effect of overconfidence (time-invariant) on mission

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
overconfidence	-0.504*** (-9.98)	-0.094*** (-5.56)	-0.054*** (-3.34)	-0.046*** (-2.63)				
overconf squared	-0.071*** (-3.80)	-0.004 (-0.61)	0.007 (1.21)	0.005 (0.82)				
mission(t-1)		0.919*** (105.90)	0.866*** (91.03)	0.863*** (85.85)	0.922*** (107.13)	0.865*** (91.29)	0.863*** (86.02)	
Supervisor evaluation			0.365*** (15.55)	0.378*** (15.28)		0.369*** (15.73)	0.383*** (15.53)	
Extraversion				-0.002 (-0.13)			-0.005 (-0.37)	
overconf_2					-0.256* (-1.91)	-0.097** (-2.24)	-0.074* (-1.74)	
overconf_3					-0.450*** (-3.11)	-0.121*** (-2.81)	-0.118*** (-2.27)	
overconf_4					-1.265*** (-8.78)	-0.222*** (-4.77)	-0.149*** (-3.44)	
CV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,668	4,661	4,661	4,395	4,668	4,661	4,661	4,395
R-squared	0.551	0.925	0.931	0.929	0.544	0.925	0.931	0.929

Notes: The dependent variable is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The independent variable *Overconfidence*, which is measured as the time-invariant scale after extracting supervisor and time fixed effects from the regression of the difference between workers' self-evaluations and their supervisors' evaluations. The independent variable *overconf_1* (reference group) is a dummy variable equal to 1 if overconfidence is below the 25th percentile and 0 otherwise. The independent variable *overconf_2* equals 1 if overconfidence is between the 25th and 50th percentiles, and 0 otherwise. The independent variable *overconf_3* equals 1 if overconfidence is above the 75th percentile, and 0 otherwise. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 12: The effect of personality traits on mission by supervisor information

	(1)	(2)
Extraversion	0.267*** (6.35)	
Uninformed supervisor	-0.270*** (-5.79)	-0.050** (-2.21)
Uninformed supervisor $\times$ Extraversion	-0.090*** (-2.63)	-0.108*** (-6.09)
CV	Yes	Yes
Year FE	Yes	Yes
Div FE	Yes	Yes
Manager FE	Yes	Yes
Worker FE	No	Yes
Observations	10,815	10,720
R-squared	0.578	0.943

Notes: The dependent variable is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The independent variable *Uninformed supervisor* is a dummy variable equal to 1 if the supervisor has spent less than one year with her subordinates, and 0 otherwise. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 13: The effect of personality traits on skill evaluation and mission

	Skill evaluation	Mission	
	(1)	(2)	(3)
Agreeableness	-0.051*** (-3.45)	-0.015 (-0.34)	0.061 (1.63)
Extraversion	0.148*** (10.62)	0.200*** (4.50)	-0.022 (-0.57)
Neuroticism	-0.079*** (-5.72)	-0.170*** (-4.02)	-0.051 (-1.39)
Openness	0.069*** (4.96)	0.044 (1.01)	-0.060 (-1.60)
Conscientiousness	0.059*** (3.72)	0.072 (1.57)	-0.016 (-0.43)
Skill evaluation			1.500*** (24.86)
CV	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Div FE	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes
Observations	4,498	4,498	4,498
R-squared	0.490	0.5423	0.6567

Notes: The dependent variable in column (1) is *Skill evaluation*, measured as the average score across 12 skills rated by supervisors. The dependent variable in column (2)-(3) is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 14: The effect of personality traits on skill evaluation by tenure

	OLS				Heckman		
	whole sample(AC+PC+SP)		AC+PC		1st stage	2nd stage	
	Skill evaluation				AC+PC	Skill evaluation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Extraversion	0.112** (2.51)		0.068 (1.47)		0.078 (0.39)	0.096** (2.16)	
tenure	0.089*** (12.17)		0.107*** (10.66)		-0.075*** (-3.35)	0.034*** (2.73)	
tenure squared	-0.002*** (-15.94)	-0.003*** (-8.06)	-0.003*** (-12.70)	-0.004*** (-6.87)	-0.000 (-0.07)	-0.000 (-0.40)	-0.002* (-1.65)
Extraversion×tenure	0.004 (0.77)	-0.003 (-0.22)	0.011* (1.80)	0.006 (0.31)	-0.022 (-1.15)	0.006 (1.07)	0.002 (0.11)
Extraversion×tenure squared	-0.000 (-0.47)	-0.000 (-1.28)	-0.000* (-1.78)	-0.001 (-1.54)	0.000 (0.77)	-0.000 (-0.53)	-0.001 (-1.25)
Lagged SP 55 share					-1.431** (-2.21)		
Inverse Mills ratio						-0.263*** (-3.86)	-0.162 (-1.37)
CV	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes	No	Yes	Yes
Worker FE	No	Yes	No	Yes	No	No	Yes
Observations	9,244	8,955	5,757	5,465	9,276	5,750	5,458
R-squared	0.503	0.963	0.496	0.959	0.453	0.521	0.959

Notes: Columns (1)–(4) present the OLS results. Columns (1)–(2) report the results for the whole sample, including associates, professionals, and principals, while columns (3)–(4) report the results for associates and professionals only. Columns (5)–(7) present the Heckman selection model. Column (5) shows the first-stage probit regression results for the whole sample, where the dependent variable is a binary indicator equal to 1 if an employee is an associate or a professional, and 0 if she is a principal. Columns (6)–(7) report the second-stage results after including the inverse Mills ratio for associates and professionals. The excluded variable, *Lagged SP 55 share*, represents the share of principals in the division who were older than 55 in the previous year. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on principal-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 15: The effect of personality traits on mission and skill evaluation by years spent with the current supervisor

	Mission			Mission (restricted sample)			Skill evaluation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Extraversion	0.126** (2.51)		0.123 (1.57)		-0.088 (-1.30)		0.149*** (6.24)	
Years Same	0.200*** (6.16)	0.049*** (2.71)	0.179*** (4.33)	-0.007 (-0.27)	0.138*** (3.90)	-0.007 (-0.31)	0.029** (2.19)	0.003 (0.20)
Extraversion $\times$ Years Same	0.052** (2.51)	0.070*** (5.92)	0.036 (1.18)	0.050*** (3.30)	0.039 (1.57)	0.052*** (3.45)	0.003 (0.37)	-0.011 (-1.31)
Skill evaluation					1.492*** (24.74)	0.260*** (4.74)		
CV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Worker FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	10,815	10,720	4,498	4,264	4,498	4,264	4,498	4,264
R-squared	0.579	0.943	0.546	0.978	0.659	0.978	0.491	0.954

Notes: The dependent variable in columns (1)-(6) is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The dependent variable in columns (7)-(8) is *Skill evaluation*, measured as the average score across 12 skills rated by supervisors. The independent variable *Years Same* is measured as the number of years a worker has spent with the current supervisor up to year t . The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 16: The effect of personality traits on mission and skill evaluation by manager rotation

	Mission			Mission (restricted sample)			Skill evaluation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Extraversion	0.271*** (5.82)		0.231*** (4.51)		0.013 (0.29)		0.145*** (9.02)	
Manager Rotation(t-1)	-0.173*** (-3.33)	-0.003 (-0.12)	-0.110* (-1.70)	0.022 (0.72)	-0.086 (-1.50)	0.020 (0.66)	-0.016 (-0.72)	0.008 (0.52)
Extraversion×Manager Rotation(t-1)	-0.091* (-1.81)	-0.066*** (-3.14)	-0.082 (-1.40)	-0.073*** (-2.73)	-0.092* (-1.82)	-0.078*** (-2.92)	0.007 (0.35)	0.018 (1.16)
Skill evaluation					1.506*** (24.80)	0.259*** (4.64)		
CV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Worker FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	6,147	5,989	4,453	4,183	4,453	4,183	4,453	4,183
R-squared	0.540	0.969	0.538	0.978	0.654	0.979	0.491	0.953

Notes: The dependent variable in Columns (1)-(6) is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The dependent variable in Columns (7)-(8) is *Skill evaluation*, measured as the average score across 12 skills rated by supervisors. The independent variable *Manager Rotation* is a dummy variable, which equals 1 if the worker experiences the supervisor rotation in the year and 0 otherwise. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

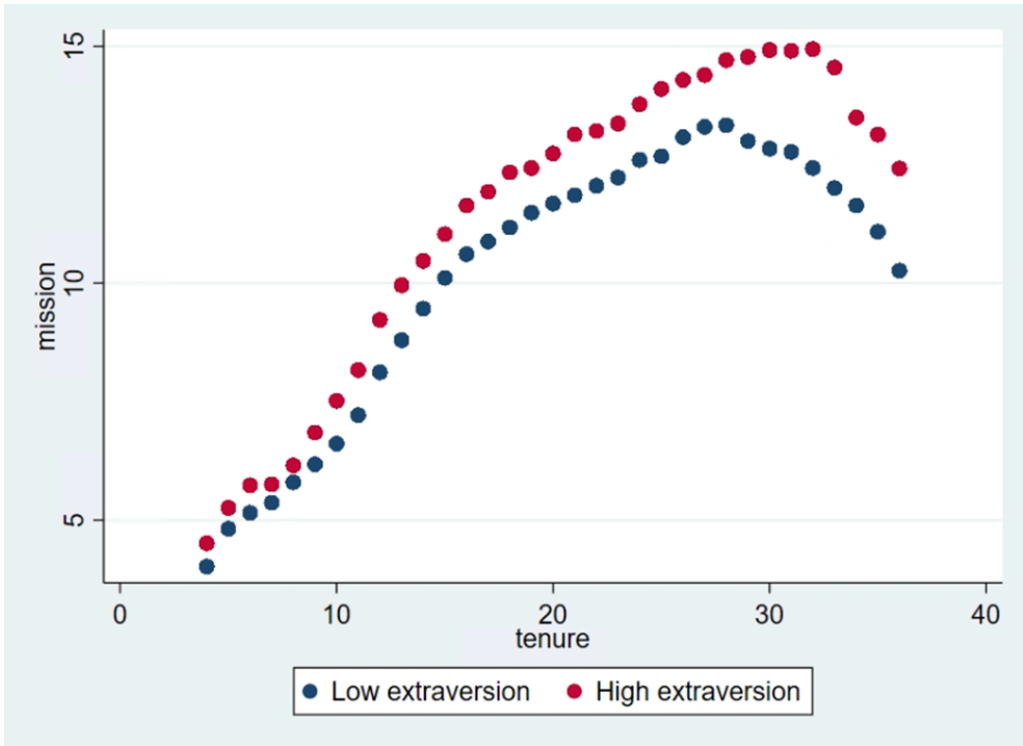
Table 17: The effect of good relationship on supervisor performance

	(1)	(2)	(3)	(4)
Subordinate Extraversion	0.038*	0.043	0.053	0.061
	(1.67)	(1.31)	(1.21)	(1.19)
Subordinate Years Same			0.041**	0.012
			(2.03)	(0.43)
Subordinate Extraversion×Subordinate Years Same			-0.008	-0.012
			(-0.38)	(-0.49)
CV	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Manager Div FE	Yes	Yes	Yes	Yes
Manager FE	No	Yes	No	Yes
Observations	3,220	2,982	3,220	2,982
R-squared	0.204	0.508	0.205	0.508

Notes: The dependent variable is *Supervisor Performance*, which ranges from 1 to 7. The independent variable *Subordinate Extraversion* is measured as the average extraversion score of subordinates. The independent variable *Subordinate Years Same* is measured as the average number of years spent with current subordinates. The control variables include supervisors' demographic characteristics—such as gender, tenure, tenure squared, age, age squared, marital status, number of children, educational attainment, and employment type (new graduate versus mid-career)—and we additionally control for the number of subordinates managed by each supervisor. The t-statistics in parentheses are based on supervisor-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix A. Appendix

Figure A1: Mission grades by tenure



Notes: Workers are classified as highly extraverted if their extraversion scores are above the sample mean, and as low extraverted otherwise.

Table A1: Time to Promotion to Professional from Associate

Panel A: Tenure at time of promotion from Associate (at the end of promotion year)

Tenure	Freq	Percent	Cum
1	1	0.20	0.20
3	2	0.40	0.59
4	494	97.63	98.22
5	3	0.59	98.81
6	3	0.59	99.41
9	2	0.40	99.80
10	1	0.20	100.00
Total	505	100.00	

Panel B: Tenure at the end of 2024 for employees not promoted from Associate

Tenure	Freq	Percent	Cum
5	2	100.00	100.00
Total	5	100.00	

Table A2: Oaxaca Decomposition: Gender differences in promotion

	Overall	Explained	Unexplained
	(1)	(2)	(3)
Male promotion probability	0.051*** (19.95)		
Female promotion probability	0.030*** (9.19)		
Gender differences in promotion probability	0.021*** (4.97)		
Explained differences	0.011*** (4.54)		
Unexplained differences	0.010** (2.43)		
Agreeableness		-0.000 (-0.71)	0.000 (0.83)
Extraversion		0.004*** (4.35)	-0.001 (-1.08)
Neuroticism		0.000 (1.33)	0.000 (0.43)
Openness		-0.001* (-1.87)	0.000 (0.53)
Conscientiousness		0.001* (1.90)	-0.001 (-1.42)
tenure		0.002 (1.22)	-0.011 (-1.01)
tenure squared		0.000 (-0.70)	-0.277 (-0.36)
age		0.038*** (3.12)	0.916*** (2.92)
age squared		-0.035*** (-2.86)	-0.401** (-2.48)
married		-0.003 (-1.35)	0.002 (0.32)
number of children		0.004*** (2.89)	0.007 (1.61)
Bachelor		0.000 (0.38)	-0.029 (-0.72)
Master		0.000 (0.56)	-0.005 (-0.05)
New Graduate		-0.000 (-0.59)	0.009 (0.68)
Year FE	Yes	Yes	Yes
Observations	10,925	10,925	10,925

Notes: The dependent variable in columns (1) is *Promotion*, which takes the value 1 if employee i is promoted from the professional level to the principal level at the end of year t , and 0 otherwise. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3: Explained variance (R^2) by personality and mission variables

Variables in regression	R^2
Control variables	0.1633
CVs + personality	0.1658
<i>Difference in R^2: Total effect</i>	0.0025
CVs + mission	0.2363
CVs + mission + personality	0.2367
<i>Difference in R^2: Direct effect</i>	0.0004

Notes: The dependent variable is *Promotion*, which takes the value 1 if employee i is promoted from the professional level to the principal level at the end of year t , and 0 otherwise. The first regression includes only control variables, which are the same as those in Table 3. The second regression includes control variables and personality traits. The third regression includes control variables and mission grades. The fourth regression includes control variables, mission grades, and personality traits.

Table A4: The effect of personality traits on mission grade and performance evaluation: Ordered logit model

	Mission	Performance	
	(1)	(2)	(3)
Agreeableness	-0.018 (-0.52)	-0.042 (-1.60)	-0.036 (-1.44)
Extraversion	0.234*** (7.09)	0.122*** (5.14)	0.078*** (3.40)
Neuroticism	-0.148*** (-4.74)	-0.093*** (-3.61)	-0.065*** (-2.63)
Openness	0.022 (0.68)	0.042* (1.65)	0.037 (1.56)
Conscientiousness	0.082** (2.30)	0.086*** (3.27)	0.071*** (2.87)
mission			0.173*** (14.29)
CV	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Div FE	Yes	Yes	Yes
Manager FE	No	No	No
Observations	10,925	10,856	10,856
Pseudo R-squared	0.129	0.0756	0.0895

Notes: The dependent variable in columns (1) is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The dependent variable in columns (2)–(3) is *Performance*, which is scored from 1 to 7, with higher values indicating better performance. Coefficients are presented in ordered logit models. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5: The effect of overconfidence on mission: IV

	1st stage	2nd stage	1st stage	2nd stage
	(1)	(2)	(3)	(4)
Skill evaluation difference		-0.377*** (-5.79)		-0.388*** (-5.59)
Other supervisor evaluation	0.649*** (27.60)		0.629*** (24.94)	
Supervisor evaluation	-0.263*** (-10.18)	1.294*** (18.00)	-0.300*** (-10.46)	1.268*** (16.29)
Extraversion			0.093*** (5.70)	0.055 (1.18)
CV	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Div FE	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes
Observations	2,344	2,220	2,508	2,388
R-squared	0.726	0.727	0.723	0.729

Notes: The dependent variable is *Overconfidence*, which is measured as the raw difference between workers' self-evaluations and their supervisors' evaluations. The self-evaluation score is calculated as the average across 12 skills rated by the worker, while the supervisor-evaluation score is calculated as the average of the same skills rated by the supervisor. The instrumental variable *Other Supervisor Evaluation* is defined as the average difference between self-evaluations and supervisor evaluations under other supervisors for employee i . The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A6: The correlation between personality traits and each skill evaluation

	(1) logical thinking	(2) lead. prospects	(3) receptivity	(4) vision	(5) communication	(6) negotiation	(7) leadership	(8) coaching	(9) biz. develop	(10) networking	(11) monetization	(12) project management
Agreeableness	-0.118*** (-6.90)	-0.123*** (-6.95)	0.067*** (3.63)	-0.130*** (-7.29)	-0.006 (-0.32)	-0.038** (-2.16)	-0.018 (-1.04)	0.024 (1.35)	-0.073*** (-4.51)	-0.011 (-0.68)	-0.076*** (-4.43)	-0.026 (-1.51)
Extraversion	0.096*** (5.81)	0.100*** (5.88)	0.060*** (3.29)	0.181*** (11.26)	0.127*** (7.53)	0.131*** (7.92)	0.153*** (9.88)	0.108*** (6.42)	0.129*** (7.84)	0.169*** (10.39)	0.111*** (6.57)	0.079*** (4.66)
Neuroticism	-0.050*** (-2.94)	-0.047*** (-2.70)	-0.098*** (-5.44)	-0.051*** (-3.04)	-0.074*** (-4.52)	-0.067*** (-3.99)	-0.073*** (-4.46)	-0.073*** (-4.75)	-0.081*** (-4.91)	-0.096*** (-5.93)	-0.068*** (-4.05)	-0.042*** (-2.54)
Openness	-0.031* (-1.75)	0.017 (0.97)	0.037** (1.95)	0.072*** (4.17)	0.055*** (3.24)	0.053*** (3.12)	0.059*** (3.64)	0.049*** (2.90)	0.025 (1.51)	0.111*** (6.76)	0.056*** (3.34)	0.025 (1.47)
Conscientiousness	0.103*** (5.50)	0.068*** (3.75)	0.046** (2.34)	0.085*** (4.64)	0.009 (0.50)	0.041** (2.29)	0.049*** (2.79)	0.051*** (2.79)	0.061*** (3.55)	0.031* (1.78)	0.050*** (2.73)	0.080*** (4.47)
CV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div. FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,488	4,488	4,487	4,488	4,496	4,483	4,485	4,486	4,479	4,480	4,482	4,489
R-squared	0.404	0.401	0.360	0.443	0.369	0.353	0.390	0.376	0.391	0.407	0.384	0.354

Notes: The dependent variable is each of the 12 skills evaluated by the supervisor. The control variables are the same as those in Table 3. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A7: Mediation analysis: Direct and indirect effects of Extraversion and Neuroticism on mission (Bootstrap method with 500 replications)

Effect	Coefficient	S.E.	Bootstrap 95% CI
<i>Extraversion</i>			
Total effect	0.258***	0.031	(0.193, 0.319)
Direct effect	0.026	0.027	(-0.025, 0.083)
Indirect effect	0.232***	0.017	(0.202, 0.265)
<i>Neuroticism</i>			
Total effect	-0.161***	0.029	(-0.221, -0.109)
Direct effect	-0.045*	0.027	(-0.095, 0.010)
Indirect effect	-0.116***	0.015	(-0.145, -0.085)

Notes: The dependent variable is *Mission*, and the mediating variable is *Skill evaluation*. The control variables are the same as those in Table 3. *** $p < 0.01$. Estimates based on bootstrap standard errors.

Table A8: Explained variance (R^2) by personality and skill variables

Variables in regression	R^2
Control variables	0.5332
CVs + personality	0.5423
<i>Difference in R^2: Total effect</i>	0.0091
CVs + skill evaluation	0.6554
CVs + skill evaluation + personality	0.6567
<i>Difference in R^2: Direct effect</i>	0.0013

Notes: The dependent variable is *Mission*, which ranges from 1 to 16, with higher values indicating more challenging and complex tasks. The first regression includes only control variables, which are the same as those in Table 3. The second regression includes control variables and personality traits. The third regression includes control variables and skill evaluations. The fourth regression includes control variables, skill evaluations, and personality traits.

Table A9: Test randomness of manager rotation

	(1)	(2)	(3)
Agreeableness	0.009 (1.59)	0.007 (1.35)	0.005 (1.06)
Extraversion	0.014** (2.45)	0.008 (1.56)	-0.003 (-0.64)
Neuroticism	-0.004 (-0.73)	0.004 (0.71)	0.003 (0.59)
Openness	0.013** (2.45)	0.008* (1.65)	0.004 (0.77)
Conscientiousness	0.002 (0.43)	0.004 (0.70)	0.008 (1.64)
female	-0.020 (-1.45)	-0.000 (-0.01)	-0.009 (-0.71)
tenure	0.012** (2.48)	0.008* (1.75)	0.004 (1.07)
tenure squared	-0.000** (-2.14)	-0.000 (-1.48)	-0.000 (-0.68)
age	-0.023* (-1.71)	-0.010 (-0.81)	-0.017 (-1.49)
age squared	0.000 (1.49)	0.000 (0.77)	0.000 (1.46)
married	-0.025* (-1.66)	-0.023* (-1.66)	-0.018 (-1.39)
number of children	-0.006 (-0.87)	-0.010 (-1.53)	-0.007 (-1.02)
Bachelor	-0.006 (-0.09)	0.006 (0.10)	-0.007 (-0.14)
Master	0.080 (0.90)	0.026 (0.33)	0.003 (0.05)
New Graduate	-0.027 (-1.12)	-0.010 (-0.46)	-0.016 (-0.78)
Year FE	Yes	Yes	Yes
Div FE	No	Yes	Yes
Manager FE	No	No	Yes
Observations	8,526	8,520	8,408
R-squared	0.018	0.108	0.337

Notes: The dependent variable is *Manager Rotation*, which is a dummy variable equal to 1 if the worker experiences the supervisor rotation in the year and 0 otherwise. The t-statistics in parentheses are based on employee-level clustered standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.