The Value of Drinking Bosses: Evidence from a Large Manufacturing Company*

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Abstract

We estimate employee returns to reporting to drinking bosses on their career. We leverage administrative data consisting of personnel records and annual health check results provided by a large manufacturing company and exploit quasi-random variations in boss switches driven by periodic personnel transfers across divisions. Our findings suggest that when male employees start reporting to a drinking boss, their annual salary increases by 2.5 percent and promotion likelihood increases by 61.3 percent after 3 and 4 years, respectively. We do not find any clear differences in the effects between drinking and non-drinking male employees. We also provide circumstantial evidence suggesting that drinking bosses are better at differentially evaluating their subordinates, resulting in a more efficient allocation of talent.

Keywords: Drinking, social interactions, promotion, managers, supervisors

JEL Codes: J16, J31, L65, M12, M51, M52, Z13

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1 Introduction

Socializing is an essential component of organizational life. Employees often interact during work hours, share lunch breaks, and sometimes spend time together outside the workplace. Through these exchanges, they can build trust and share work-related information. Such relationships and information can be crucial for an employee's career.

In particular, a strong relationship with one's direct supervisor can be especially beneficial. By socially engaging with their boss, employees may gain more opportunities for learning, self-promotion, or patronage. They can become more productive through knowledge sharing, send clearer signals of their aptitude for favorable personnel decisions, or even receive preferential treatment. All of these factors can facilitate upward mobility within a company.

We focus on workplace socializing through drinking. Having after-work drinks with colleagues is common in many countries, and some firms sponsor happy hours or organize social events featuring alcohol. Endorphins released during alcohol consumption can induce feelings of cheerfulness, potentially making social interactions easier. Indeed, many workers believe that drinking with colleagues improves their workplace relationships.[1] These observations suggest that drinking often serves an important social function in the workplace.

In this study, we estimate the effects of drinking with the boss on employees' careers. We use administrative data consisting of personnel and annual health check records provided by a listed manufacturing company. Our data set spans from April 2006 to March 2019, consisting of 2,340 unique employees, 1,024 unique bosses, and 16,692 employee-year observations. The health check records include self-reported drinking status in frequency and quantity, allowing us to define drinking employees and bosses.

We exploit the quasi-random allocation of bosses driven by periodic personnel transfers across divisions to estimate the effects of drinking with the boss on employees' salary and promotion. In estimation, we divide our sample by gender because female and male employees typically exhibit differing patterns in their career trajectories. By estimating the event-study model, we find that when male employees report to a drinking boss, their annual salary increases by 2.5 percent after 3 years, their promotion likelihood increases by 6.8 percentage points after 2 years, or equivalently by 61.3 percent, and annual overtime decrease by 10.5–12.1 hours over the following 2 years (14,333 observations of 1,874 unique male employees).

Our preferred interpretation is that drinking bosses frequently organize social events or ask subordinates out for after-work drinks, which provides employees with additional

[1] See https://www.niznikhealth.com/research-articles/drinking-in-the-workplace/.

opportunities for learning, mentorship, and coordination. Interestingly, our results suggest that the drinking status of employees themselves does not matter in the effects of reporting to drinking bosses. This implies that some modes of socializing are more inclusive than other modes of socializing (e.g., shared smoking breaks).

To explore the underlying mechanism, we also present circumstantial evidence suggesting that the drinking-boss effect is driven primarily by drinking bosses' greater ability to differentiate among their subordinates in evaluations. We propose a simple model of employee evaluation featuring two types of bosses (well- and poorly-informed) and derive several empirically testable predictions. Our empirical findings align with these predictions and are difficult to reconcile with other plausible explanations.

Our estimates for the female sample are statisitically insignificant and imprecise because they are underpowered (2,359 observations of 466 unique female employees). Although it is difficult to draw any conclusions about the possible contribution of the drinking-boss effects to the gender gap, it is conceivable that female employees may face higher costs in participating in drinking with the boss than males due to family duties. If this is true, our results may imply that drinking bosses are instrumental in the formation of the old boys' club, in which male employees can have an advantage in climbing the corporate ladder by having more opportunities to interact with powerful men than their female counterparts.

Our study contributes to various streams of literature. Most relevant to our study is the literature on the roles of social interactions within organizations. Cullen and Perez-Truglia (2023) provide pioneering evidence on the effects of socializing with the boss on employees' career progression. Bandiera et al. (2009) present experimental evidence that managers favor workers to whom they have social connections when they are paid fixed wages, which is found detrimental to the firm productivity. Chan et al. (2014) show that salespeople's productivity grows by learning from peers through social interactions. Frakes and Wasserman (2021) also document that interactions with coworkers affect patent examiners' granting styles. Kawata and Owan (2022) shows that exposure to elderly coworkers improves younger employees' job satisfaction but deteriorates that of middle-aged employees. More broadly, social interactions and networks are also found to have significant effects on various labor market outcomes outside organizations (Shue, 2013; Lerner and Malmendier, 2013; Agarwal et al., 2016; Field et al., 2016; Markussen and Røed, 2017; Lleras-Muney et al., 2022).

Our findings contribute to this literature by providing another piece of evidence for career boosts through workplace socializing. We show that socializing with the boss accelerates career progression in a Japanese manufacturing company, which supports the external validity of part of the findings from Cullen and Perez-Truglia (2023), reporting the career advancement effects of socializing via shared smoking breaks with the boss in a private banking

corporation in Southeast Asia. We also provide a new piece of evidence that modes of socializing may play an important role in the workings of career advancement effects of socializing in organizations.

We also contribute to the growing body of literature on the roles of middle managers and first-line supervisors.[2] Lazear et al. (2015) find that the quality of bosses in terms of their subordinates' productivity varies significantly even within a single firm. Frederiksen et al. (2020) show that bosses vary widely in how they evaluate the performance of subordinates of similar quality. It has also been shown that certain skills of middle managers are particularly important. Artz et al. (2017) document that bosses' technical competence is a significant determinant of employees' job satisfaction, Kuroda and Yamamoto (2018) find that bosses with good communication and managerial competence improve workers' mental health, and Hoffman and Tadelis (2021) find that higher people management skills reduce personnel turnover. Friebel et al. (2022) provide evidence that middle managers are instrumental in front-line operations and that they face a multitasking environment with limited resources. Metcalfe et al. (2023) find that store managers account for a large share of store-level performance and manager quality is not well explained by observables, using data from two large retail companies. Minni (2023) shows that better managers effectively transfer their subordinates to a new position with higher match quality using personnel records from a large multinational company.

Our study contributes to this body of literature by providing new evidence on the importance of specific aspects of bosses. Compared to the "value-added" approach as done in Lazear et al. (2015) and Frederiksen et al. (2020) for example, we focus on a specific feature of bosses rather than capturing bosses' overall quality or tendency, which could lump various components altogether. By decomposing managerial quality into pieces, we can better understand the roles and values of middle and first-line managers in organizations. It is also noteworthy that our findings on the differing evaluation styles of drinking versus non-drinking bosses align with Minni (2023), who show that supervisors play a pivotal role in the efficient allocation of talent.

Our paper is also closely related to the literature on the link between drinking and labor market outcomes (Mullahy and Sindelar, 1996; Hamilton and Hamilton, 1997; Lee, 2003; MacDonald and Shields, 2004; Auld, 2005; Schilbach, 2019; Wang et al., 2023; Deng and Lu, 2024). The literature shows that moderate drinkers earn more than heavy drinkers and abstainers on average. A recent large-scale survey in the East Asian economies reveals that genetically alcohol-tolerant men consume more alcohol, but their earnings and hours worked are at the same level as alcohol-intolerant men (Kawaguchi et al., 2023).

[2]See Roberts and Shaw (2022) for a recent comprehensive review.

We contribute to this strand of literature by providing the first evidence of the link between drinking and labor market outcomes within a single company. All previous studies use observations in the external labor market, which means individuals working in different companies. It is difficult to fully control for unobserved heterogeneity that comes from different working conditions in different companies. Our setting provides cleaner evidence in that our sample comes from a single company, and those individuals work in almost the same working conditions.

We also marginally contribute to the large body of literature on the gender gap (Goldin, 2014). Although our estimates are imprecise for the female sample, we find null effects of drinking bosses on female employees' careers, whereas we find clear evidence for such effects in the male sample. If social events with alcohol and after-work drinking are less accessible to female employees, our findings imply that drinking bosses form the old boys' club, adding a new piece of evidence supporting the recent study (Cullen and Perez-Truglia, 2023).

Our study contributes to the growing body of research using personnel records from large Japanese companies. The long-standing debate about Japan's economic miracle has often highlighted efficient management practices developed and adopted by leading Japanese firms as a key factor (Abegglen, 1958; Aoki, 1988; Liker, 2004; Waldman, 2012). However, as Japan's economy began to stagnate, some researchers pointed out that the traditional employment practices, which are now outdated, as a significant factor undermining labor productivity (Ito and Hoshi, 2020). These contrasting observations underscore the critical role of human resource management in shaping Japan's economic performance.

The increased availability of personnel records from Japanese companies, which were previously almost inaccessible to researchers, has enabled a surge in studies exploring the internal labor markets in various organizational contexts. This emerging research stream has provided valuable insights into key aspects and mechanisms of Japan's internal labor markets (e.g., Sato et al. (2019), Sato et al. (2020), Shangguan et al. (2021), Kojima and Odahara (2021), Kitagawa et al. (2021), Kawata and Owan (2022), Lo et al. (2022), Dessein et al. (2022), Dessein et al. (2024), Dong et al. (2024), Okudaira et al. (2024), Yang et al. (2024), Aizawa et al. (2024), Okuyama et al. (2024)). These studies have significant implications not only for Japan's economy but also for economies worldwide. Our research contributes to this growing body of literature by offering new evidence and filling the gap in our understanding of the important of bosses and socializing in organizations.

The remainder of this paper proceeds as follows. Section 2 describes the data and organizational context of the company. Section 3 explains our identification strategy and shows the estimation results. Section 4 concludes.

2 Data and Organizational Context

In order to study the potential returns to socializing with bosses, we use unique personnel records provided by a listed manufacturing company in Japan, which remains unnamed. The company's recent disclosure shows it comprises approximately 8,000 employees on a consolidated basis. Among them, we focus on domestic employees who engage in the company's core businesses. We further restrict our sample to those in the lower pay ranks with no managerial duties, which results in 16,692 employee-year observations with 2340 unique employees and their 1,024 unique bosses from 2006 to 2019. The male sample contains 14,333 observations of 1,874 unique male employees, and the female sample contains 2,359 observations of 466 unique female employees.

Our data set consists of five primary data sources. First, we have monthly attendance records, which include information on how many days each employee worked and how many hours each employee worked overtime for each month. Second, we have annual evaluation records, which include information on to whom each employee directly reported, i.e., who their direct boss was and annual performance evaluations given by the boss. Third, we have pay-grade information and annual compensation records. Fourth, we have annual engagement survey results, which include responses from employees to questions about their work engagement. Lastly, we have annual health check results, which provide information on employees' health status and habits. Since employers are legally required to arrange annual medical examinations for their employees in Japan, the take-up rate is very high. Importantly, employees were asked about their drinking and smoking habits in health checks, and we use this information to measure increased opportunities to socialize with bosses.

We focus on non-managerial permanent employees in the lowest pay-grade range. This range contains five grades. We define promotion as any increase in employees' pay grade. The annual average promotion rate for employees in this job-grade range is 8.9 percent. Namely, approximately 9 employees are promoted for every 100 employees every year. Male employees are promoted at 9.1 percent, while female employees are promoted at 7.7 percent. The 18.2% difference (1.4 percentage points) is statistically significant ($p = 0.000$), suggesting a gender gap in promotion. Since promotions take place in a certain few months of the year, we collapse the monthly promotion records to the annual level.

Our focus is on frontline supervisors who are in charge of directly supervising the non-managerial workforce.[3] At the study company, frontline supervisors are the ones who submit annual performance evaluations of their direct reports. Employees take their annual evaluations seriously because they are a crucial determinant of their bonuses and promotions.

[3]Most supervisors in this company have managerial titles.

We can identify the supervisor for each employee in December, when annual evaluations are submitted to the company's human resource management system. We refer to these frontline supervisors as bosses throughout this paper.

The company periodically rotates employees across different divisions, which enables us to observe a sufficient number of boss transitions driven by both boss and employee transfers. Personnel decisions are centralized to a great extent, and employees do not have a voice in where and with whom to work. An average employee in our sample reported to 2.32 different bosses over the observation periods. The average span of control is about 3–4 across years, and the average boss-subordinate tenure is 26.9 months.

To determine the drinking status of employees and their bosses, we use data from the annual health check. The health check records contain workers' responses to two questions about their drinking habits. One question asks about the frequency of alcohol consumption. The possible answers for this item are (i) hardly (or cannot drink), (ii) sometimes, and (iii) every day. The other item asks about the average amount of alcohol consumed on a day when they drink. The possible answers are (a) less than 20 grams, (b) 20 or more and less than 40 grams, (c) 40 or more and less than 60 grams, and (d) 60 grams or more in pure alcohol.[4]

We define drinking employees and bosses by the combination of their responses to the two drinking-related questions as specified in Table 1. We use the oldest drinking status records we have for each employee and each boss to classify drinking and non-drinking employees and bosses.[5] Since health check results are confidential and only available to a limited number of industrial health staffers, it is unlikely that workers have any incentives to report untruthfully for career concerns.

Our sample includes both white-collar and blue-collar workers. More specifically, it includes those with administrative, sales, R&D, and production roles. Employees with administrative roles are those who work in such as accounting, human resource, and public relations divisions. Those with sales and R&D roles are those who are assigned to sales and R&D divisions, respectively. Those with production roles are those who work in the factories and directly engage in the manufacturing process. We observe this job-functional information for each employee-year observation up to the fiscal year 2018. Unfortunately, this information is not available for the fiscal year 2019. From 2006 to 2018, administrative, sales, R&D, and production roles account for 22.3%, 19.5%, 24.0%, and 34.2% of our employee-year observations, respectively. Approximately 70% of the unique employees in our

[4]The actual wording of the question uses a Japanese unit used to measure sake, *gō*. 1 *gō* amounts to approximately 180 milliliters of sake, which typically contains approximately 20 grams of pure alcohol. For reference, note that a glass of wine typically contain approximately 10 grams of pure alcohol.

[5]The estimation results are qualitatively unchanged when we use the latest records.

sample never experienced a change in their job functions, and, in estimation, most variations will be absorbed by the two-way fixed effects. Our results are qualitatively unchanged when we explicitly control for job functions.

3 Results

3.1 Econometric Model

We estimate the effects of drinking with the boss using the event-study specification. Let $T_{i,t}$ be the indicator function that takes 1 if employee i experiences a boss transition in year t. We define $D_{i,t}$ to be the treatment variable that takes 1 if employee i starts reporting to a drinking boss in year t. When an employee experiences more than one boss transition over the observation periods, we focus on the first one. Our regression equation is

$$y_{i,t} = \sum_{s \in \mathcal{S}} \beta_s^D D_{i,t-s} + \sum_{s \in \mathcal{S}} \beta_s^T T_{i,t-s} + \alpha_i + \delta_{d(i,t)} + \mu_{m(i,t)} + \tau_t + \varepsilon_{i,t}, \tag{1}$$

where the fixed effects of employees (α_i), divisions ($\delta_{d(i,t)}$), bosses ($\mu_{m(i,t)}$), and years (τ_t) are controlled and where $d(i,t)$ and $m(i,t)$ represent the division and boss to which and whom employee i belongs and reports in year t, respectively. Note that $\mathcal{S} = \{-5, \ldots, -2, 0, 1, 2, \ldots, 5\}$. Namely, we set the window within five years from the event. We also control for the squares of age, tenure and his boss's age.

The parameter β_s^D is interpreted as the effect of reporting to drinking bosses among those who experience boss transitions. In our estimation, we divide the sample into males and females because males and females typically exhibit different patterns in their career trajectories. We cluster our standard errors at the employee and boss levels.

Our identification relies on the parallel trends assumption, which can be indirectly tested by event-study graphs. We have two substantive justifications for our identification strategy. First, personnel transfers are operated in a centralized manner, and each employee and manager has little discretion in whom to work with. Second, drinking status is collected as medical information and therefore classified as confidential, to which only a limited number of authorized personnel, usually industrial health experts, may access, which supports that the centralized personnel transfers are independent of drinking status.

A natural question to ask is whether the effects of drinking bosses differ by the drinking status of employees themselves. To answer this question, we also estimate the event-study model with interactions of the event-study variables ($D_{i,t}$ and $T_{i,t}$) and the drinking status of employees themselves to see if the effects are different for drinking and non-drinking

employees. Let B_i denote the drinking status of employee i. Then, the estimating equation is

$$\begin{aligned} y_{i,t} = & \left(\sum_{s \in \mathcal{S}} \beta_s^D D_{i,t-s} + \sum_{s \in \mathcal{S}} \beta_s^T T_{i,t-s} \right) \times (1 - B_i) \\ & + \left(\sum_{s \in \mathcal{S}} \theta_s^D D_{i,t-s} + \sum_{s \in \mathcal{S}} \theta_s^T T_{i,t-s} \right) \times B_i \\ & + \alpha_i + \delta_{d(i,t)} + \mu_{m(i,t)} + \tau_t + \varepsilon_{i,t}. \end{aligned} \tag{2}$$

The parameters β_s^D and θ_s^D are interpreted as the drinking-boss effects on non-drinking and drinking employees, respectively.

3.2 Main Results

We drop the results for female employees and only present results for male employees because all our estimates for the female sample are statistically insignificant and imprecise.[6]

Figure 1 visualizes the estimates of β_s^D from the event-study regression without any interaction terms (equation (1)). The event dummy of the year just before the boss transition ($D_{i,-1}$) is omitted as the baseline in our estimation, and the vertical value in period -1 is zero in the graphs by construction. The event-study graphs provide supporting evidence for our identification assumption that the trends are parallel. Although the pre-treatment trajectory for overtime is somewhat bumpy, the pre-treatment paths of the the logarithm of salary and promotion stay close to zero. Together with the testimony from the human resource team at the company that the personnel transfers are as good as random, this event-study visualization gives more credibility to our estimates.

Panel A of Figure 1 shows that when male employees start reporting to a drinking boss, their annual compensation significantly increases after 3 years, earning 2.5 percent more than the control group ($p = 0.045$). Panel B of Figure 1 suggests that when male employees start reporting to a drinking boss, their promotion probability increases by 6.8 percentage points after 2 years ($p = 0.006$). The promotion effects are sizable, amounting to a about 61.3 percent increase in the promotion likelihood relative to the average post-event promotion rate for males in the control group (11.6 percent). The results in panels A and B are consistent with the company's compensation policy where promoted employees start getting a pay raise in the following year.

Panel C of Figure 1 indicates that when male employees start reporting to a drinking

[6]The estimates for the female sample are available upon request.

boss, their annual overtime decreases after 0, 1, and 2 years by 10.5, 12.1, and 11.1 hours ($p = 0.032$, $p = 0.021$, $p = 0.020$), respectively. This result implies that drinking bosses enhance employees productivity more than non-drinking bosses, possibly by fostering communication in the team through after-work drinks.

Figure 2 presents the estimates of θ_s^D from the event-study regression with the event-study variables interacted with employees' own drinking status (equation (2)). As can be seen from the panels, there are no clear differences in the effects of reporting to a drinking boss between drinking and non-drinking employees. This results imply that drinking bosses positively affect both drinking and non-drinking employees.

Drinking bosses may organize social events for their subordinates or ask them out for after-work drinks more frequently than non-drinking bosses, and the participation cost may be the same for drinking and non-drinking employees. Compared to some other modes of socializing such as smoking breaks, participating in social events with alcohol served and going to a bar is supposed to be more accessible even if one does not drink much or any alcohol because one has an option of non-alcoholic beverages or can drink at own pace. If this is true, employees who report to drinking bosses may have more opportunities to socialize with the boss regardless of their own drinking habits.

3.3 Heterogenous Effects

We also disentangle possible heterogeneities of the drinking boss effect across different sets of employees. For the ease of presentation, we report estimates based on the simple difference-in-differences approach. We estimate the following regression equation.

$$\begin{aligned} y_{i,t} = \beta_{\text{DID}}^D D_{i,t} + \beta_{\text{DID}}^T T_{i,t} \\ + \left(\theta_{\text{DID}}^D D_{i,t} + \theta_{\text{DID}}^T T_{i,t}\right) \times H_i \\ + \alpha_i + \delta_{d(i,t)} + \mu_{m(i,t)} + \tau_t + \varepsilon_{i,t}, \end{aligned} \tag{3}$$

where H_i denotes a binary variable representing the possible sources of heterogeneity. The definitions of the other variables are the same as in equation (1).

Specifically, we focus on the following characteristics of employees, workplaces, and bosses as the possible sources of heterogeneity.

- **Employee characteristics:**
  - (i) Whether the employee has at least one child under seven.
  - (ii) Whether the employee is a blue-collar worker. (Whether he or she engages in production.)

- **Workplace characteristics:**

  (iii) The number of employees supervised by the same boss. (The span of control.)

  (iv) The number of employees in the same division. (The size of the division.)

  (v) The drinking rate of employees supervised by the same boss.

  (vi) The drinking rate in the same division.

- **Boss characteristics**

  (vii) The age of the boss.

  (vii) Whether the boss has at least one child under seven.

  (viii) Whether the boss is female.

We use the values at period when the employee is assigned a new manager (i.e., $t = 0$). For the span of control, size of the division, ratio of drinkers, and boss age, we define H_i such that it takes 1 when the value exceeds the median and 0 otherwise.

We select these variables as the heterogeneity sources of interest in order to take a closer look into the mechanism. These variables can be interpreted as the payoff or cost parameter for employees engaging in after-work drinks. For example, an employee may receive a smaller benefit from a drinking boss when he or she supervises many other employees because his or her attention might get dispersed. Also, if an employee has an infant, he or she might find it difficult to participate in workplace social events organized by his or her drinking boss. If the drinking boss effects are largely driven by the increased chance of socializing via after-work drinks, we should expect to find such heterogeneities.

The estimation results are presented in Table 2. Each column corresponds to one of the sources of heterogeneity with the first column showing the estimates without the interaction ($\left(\theta^D_{\text{DID}} D_{i,t} + \theta^T_{\text{DID}} T_{i,t}\right) \times H_i$). The estimates of the heterogeneous effects (θ^D_{DID}) are presented in each first row, and the baseline effects (β^D_{DID}) in each second row.

We find positive and statistically significant heterogenous effects with respect to the span of control, colleagues' drinking status, and job types of employees. Column 1 of Table 2 illustrates the heterogeneous effects of drinking bosses on the logarithm of salary. The benefit from drinking bosses is significantly higher by 5.4 percent when more of their subordinates drink. The result implies that if more drinking employees are in a team, more people might join after-work drinks, which can enhance the effectiveness of socializing. Furthermore, the coefficient for the baseline (β^D_{DID}) is estimated to be negative, which implies that having a drinking boss in a dry team might penalize the employee with a decreased salary.

Column 2 of Table 2 shows that the drinking-boss effect on the promotion probability is smaller by 7.5 percentage points when the boss supervises a larger number of employees. This implies that employees in smaller teams may benefit more from the drinking boss, possibly because of the increased attention from the boss.

While we do not find any evidence that the benefit of drinking bosses differs by the other variables, such as employees' family information or boss characteristics, our results are consistent with the hypothesis that drinking bosses positively affect their direct reports by offering more opportunities to socialize in the workplace.

3.4 Mechanism

In this subsection, we discuss three possible mechanisms that can explain our main results of the significant drinking-boss effects and insignificant drinker-to-drinker advantage. The three possible mechanisms are (1) enhanced productivity, (2) favoritism, and (3) well-informed bosses. We highlight the better-informed bosses story as our preferred interpretation providing a simple conceptual framework and an additional data exercise that offers circumstantial evidence supporting the framework.

The first possible mechanism is *enhanced productivity*. If the boss is more likely to ask his or her subordinates for after-work drinks, this may provide subordinates with more opportunities to exchange information relevant to business operations. If this is the case, it is conceivable that enhanced productivity helps employees to get promoted. Since our data does not contain objective productivity measures, we cannot directly test this hypothesis. The second possible mechanism is *favoritism*. Employees may form a close personal tie with their bosses through increased opportunities to socialize with them when they are assigned a drinking boss and get a leg up in promotion decisions. If favoritism is the major driver of the drinking-boss effects, we could ideally test it by showing non-increased productivity after the boss switch. Again, we cannot test this hypoethesis due to the lack of data.

Last but not least, our preferred interpretation is the *well-informed bosses* story. It is possible that when a boss has more exposure to his or her direct reports, he or she may receive a more accurate signal about their ability and aptitude. Bosses who receive accurate signals about their subordinates' ability should be able to evaluate them more differentially than poorly-informed bosses. Supposedly, an employee is promoted when his or her performance is evaluated to be good enough for a promotion, so employees may be more likely to get promoted, on average, when they report to well-informed bosses. This can explain our findings on the drinking-boss effects.

To formalize our idea about the well-informed boss story, we present a simple conceptual

framework in the spirit of Kawaguchi et al. (2016). Consider a set-up in which the supervisor evaluates her subordinate. Assume that subordinate ability is normally distributed: $a \sim \mathcal{N}(\overline{a}, \sigma_a^2)$. The supervisor receives a noisy signal about her subordinate, $\widehat{a} = a + \varepsilon$, where $\varepsilon \sim \mathcal{N}(0, \sigma_s^2)$. Assume a and ε are independent. Then, she makes an evaluation a^e. Assume that submitting an evaluation deviating from the true ability is costly for the supervisor. The supervisor's utility is given as the expected value of the squared error of her evaluation, conditional on the signal:

$$\mathsf{E}\left[-(a^e - a)^2 \mid \widehat{a}\right].$$

The intuition of this assumption is that it can hurt the supervisor's reputation in the organization if she evaluates a subordinate higher than he actually is because then he is more likely to be promoted to an undeserved position and turn out to be incompetent. The other side is also based on a similar discussion. It is possible that subordinates may report to the HR department claiming their supervisor is unfair when they are evaluated lower than they really are, which may hurt her reputation.

The supervisor's problem is

$$\max_{a^e} \quad \mathsf{E}\left[-(a^e - a)^2 \mid \widehat{a}\right].$$

By the standard signal extraction exercise, we can show that

$$a^{e*} = \frac{\sigma_s^2}{\sigma_a^2 + \sigma_s^2}\overline{a} + \frac{\sigma_a^2}{\sigma_a^2 + \sigma_s^2}\widehat{a}.$$

We introduce two types of supervisors: $s \in \{W, P\}$. Here, W stands for well-informed bosses and P stands for poorly-informed bosses. Accordingly, assume $\sigma_W^2 < \sigma_P^2$. Suppose that the subordinate is promoted when $a^e \geq t$ for some $t \in \mathbb{R}$. Note that $\widehat{a} \sim \mathcal{N}(\overline{a}, \sigma_a^2 + \sigma_s^2)$. Since $a^{e*} \sim \mathcal{N}\left(\overline{a}, \frac{\sigma_a^4}{\sigma_a^2+\sigma_s^2}\right)$, the probability that he is promoted is

$$\mathsf{Pr}(a^{e*} \geq t) = 1 - \Phi\left(\frac{\sqrt{\sigma_a^2 + \sigma_s^2}}{\sigma_a^2}(t - \overline{a})\right). \tag{4}$$

Let a_W^{e*} and a_P^{e*} denote a^{e*} under $s = W$ and $s = P$, respectively. We can immediately derive the following results.

1. $\mathsf{Pr}(a_W^{e*} \geq t) > \mathsf{Pr}(a_P^{e*} \geq t)$ because (4) is decreasing in σ_s^2.
2. $\mathsf{Var}(a_W^{e*}) > \mathsf{Var}(a_P^{e*})$ because $\frac{\sigma_a^4}{\sigma_a^2+\sigma_W^2} > \frac{\sigma_a^4}{\sigma_a^2+\sigma_P^2}$.
3. $\mathsf{E}(a_W^{e*}) = \mathsf{E}(a_P^{e*})$ because $a_W^{e*} \sim \mathcal{N}\left(\overline{a}, \frac{\sigma_a^4}{\sigma_a^2+\sigma_W^2}\right)$ and $a_P^{e*} \sim \mathcal{N}\left(\overline{a}, \frac{\sigma_a^4}{\sigma_a^2+\sigma_P^2}\right)$.

4. Conditioning on a and a' such that $a' > a$, we have $\mathsf{E}(a_W^{e*}|a') - \mathsf{E}(a_W^{e*}|a) > \mathsf{E}(a_P^{e*}|a') - \mathsf{E}(a_P^{e*}|a)$, or equivalently,

$$\mathsf{E}(a_W^{e*}|a') - \mathsf{E}(a_P^{e*}|a') > \mathsf{E}(a_W^{e*}|a) - \mathsf{E}(a_P^{e*}|a).$$

We hypothesize that drinking bosses (type W) receive more precise signal through after-work drinks than non-drinking bosses (type P). The intuition of the above results is that 1. employees are more likely to be promoted under drinking bosses than their counterparts under non-drinking bosses, 2. the variance of evaluation submitted by drinking bosses is larger than that of non-drinking bosses, 3. the means of evaluation submitted by drinking and non-drinking bosses are the same, and 4. the drinking-boss effect is greater for those with higher ability and vice versa. The first prediction is consistent with our event-study results. The other three can also be tested with the data.

To test the second and third predictions, we compare the means and variances of evaluation distributions between drinking and non-drinking bosses. Let $a_{i,t}^e$ denote the personnel evaluation that employee i receives in year t. Index bosses by $m = 1, 2, 3, \ldots, M$. Let $\mu(i,t)$ indicate the boss (evaluator) to whom employee i reports in year t. Define $\mathcal{M}(m,t)$ be the set of employees who reported boss m in year t, i.e., $\mathcal{M}(m,t) = \{i : m = \mu(i,t)\}$. Now, we define the boss-year-specific evaluation mean $\bar{a}_{m,t}^e$ to be the quantity calculated as

$$\bar{a}_{m,t}^e = \frac{1}{|\mathcal{M}(m,t)|} \sum_{i \in \mathcal{M}(m,t)} a_{i,t}^e, \tag{5}$$

and the the boss-year-specific evaluation variance $\sigma_{m,t}^2$ to be the quantity calculated as

$$\sigma_{m,t}^2 = \frac{1}{|\mathcal{M}(m,t)| - 1} \sum_{i \in \mathcal{M}(m,t)} (a_{i,t}^e - \bar{a}_{m,t}^e)^2. \tag{6}$$

We test whether there are differences in $\bar{a}_{m,t}^e$ and $\sigma_{m,t}^2$ on average between drinking and non-drinking bosses. Table 3 shows the difference between drinking and non-drinking bosses in terms of the mean and variance of their evaluation scores. We do not find a significant difference in means while we do find a significantly larger variance for drinking bosses than non-drinking bosses, as predicted by our conceptual framework.

Next, we test the fourth prediction by quantile regression. We estimate the following equation:

$$a_{i,t}^e = \rho_q D_{i,t} + \mathbf{X}_{i,t}' \boldsymbol{\beta} + \eta_{i,t}, \tag{7}$$

with the restriction that

$$\mathbb{Q}_q[\eta_{i,t}|D_{i,t}, \mathbf{X}_{i,t}] = 0,$$

where subscript q denotes quantiles, $\mathbb{Q}_q(Y)$ is defined such that $\mathbb{Q}_q[Y \leq \mathbb{Q}_q[Y]] = q$, and $\mathbf{X}_{i,t}$ is a vector of controls that include employee i's age, tenure, boss age, and their squares in year t, and a constant. The fourth prediction suggests that $\rho_{q'} > \rho_q$ for $q' > q$.

Figure 3 shows the coefficient estimates $\widehat{\rho}_q$ for each quantile. The estimates are larger in the absolute sense for those far away from the median, which is consistent with our prediction. Namely, those who were in the lower tail are evaluated more severely and those who were in the upper tail are evaluated more favorably under drinking bosses. Our interpretation is that drinking bosses are better at differentiating their subordinates than non-drinking bosses.

The quantile regression estimates also provide suggestive evidence against the enhanced productivity and favoritism hypotheses. If drinking bosses enhance subordinates' productivity by better communication or coordination, it is difficult to conceive a case where some subordinates are better off and others not, especially in the manner in which abler subordinates are better off and less able ones are worse off. A similar argument can be made for favoritism as well. The results make us suspect that it is the case that well-informed bosses hypothesis is the dominant driving force of the drinking-boss effects.

We examine whether drinking bosses are really better at differentiating subordinates in a meaningful manner by looking into the performance after the termination of the focal boss-subordinate relationship. We compare employees who were promoted under a drinking boss and employees who were promoted under a non-drinking boss in terms of their performance after they were assigned to another new boss. If favoritism is the main channel, then we should observe treatment-group promoted employees only performing as good as or even worse than control-group promoted employees because the former gets a leg up based on factors that are not necessarily related to work. If it is the case that drinking bosses are better-informed about subordinates' ability, then treatment-group promoted employees should outperform control-group promoted employees.

We first restrict our sample to employees who experienced boss switches during the observation periods. Next, we further restrict the sample to those who were promoted while they were reporting to the boss that they received for the first boss switch. We then calculate the number of promotions after they start reporting to a new boss, i.e., after the second boss switch. We use promotion because promotion can be considered as a holistic metric of performance (Minni, 2023). This procedure constitutes a cross section of treatment-group and control-group promoted employees.

Using this cross-section sample, we estimate the following quasi-Poisson count model:

$$\ln \mathsf{E}[(\#\text{ of promotions})_i | D_i, \mathbf{X}_i] = \rho D_i + \mathbf{X}_i' \boldsymbol{\beta}, \tag{8}$$

where D_i indicates whether employee i was assigned a drinking boss for the first boss switch and $\mathbf{X}_i$ is a vector of controls that include age, tenure, boss's age, and their squares. We also control for blue-collar worker dummy. If drinking bosses effectively differentiate subordinate with good talent from others, those promoted under drinking bosses should perform better than those promoted under non-drinking bosses. Accordingly, the well-informed bosses hypothesis predicts the coefficient ρ to be positive.

Table 4 presents the estimation result. Columns (1) and (2) of Table 4 shows the coefficient estimate and the average marginal effect, respectively. Consistent with the prediction, those promoted under drinking bosses appear to perform better than those promoted under non-drinking bosses. The former experiences 0.284 more promotions than the latter on average. Since the average number of promotions for the latter is 1.073, the average marginal effect amounts to a 20.93 percentage increase in promotions, which is economically significant. The estimates provide evidence supporting the well-informed boss hypothesis.

In sum, the pattern of results across our empirical tests is difficult to reconcile with the enhanced productivity or favoritism scenarios, yet accords well with the well-informed bosses interpretation. While we cannot completely rule out the possibility that other mechanisms may be at work, the empirical evidence, including the variance in evaluations, the quantile-regression analysis, and the subsequent promotions of workers once they move to a new boss, supports the view that drinking bosses better differentiate high-ability workers from low-ability ones. Thus, the well-informed boss mechanism appears to be the primary driver of the observed drinking-boss effects.

4 Concluding Remarks

We have studied the effects of socializing with the boss on employees' career. Our findings are threefold. First, male employees earns a higher salary and get promoted at a higher rate when they start reporting to a drinking boss. These results suggest that employees may have more social interactions with drinking bosses presumably because they organize social events or ask them out for after-work drinks more frequently than non-drinking bosses.

Second, we have found that the effects of reporting to a drinking boss are fairly homogeneous among drinking and non-drinking employees. Borrowing the phraseology from Cullen and Perez-Truglia (2023), we do not find any significant *drinker-to-drinker advantages*. This result may imply that some modes of socializing are more inclusive than others. For exam-

ple, it is conceivable that smoking breaks are less inclusive than after-work drinks and social events with alcohol served. Of course, drinking may also be an non-inclusive instrument of socializing, especially for those with family duties. A new perspective this study provides is that modes of socializing may play an important role in the workings of career advancement effects of socializing in organizations. In addition, finding no clear heterogeneity in the drinking-boss effects on drinking and non-drinking employees is consistent with Kawaguchi et al. (2023), who found no significant returns to alcohol tolerance on earnings.

Third, we have also provided circumstantial evidence suggesting that drinking bosses are better at differentially evaluating their subordinates by acquiring information about worker ability via drinking, resulting in a more efficient allocation of talent. Our mechanism eliminates favoritism, indicating that evaluations conducted by drinking bosses do not hurt firm-level efficiency, a finding that contrasts with Cullen and Perez-Truglia (2023). Furthermore, as highlighted in the promotion dynamics literature (Baker et al., 1994; Gibbons and Waldman, 1999), employees promoted under a drinking boss tend to accrue additional experience following their promotion, which may, as demonstrated by Minni (2023), contribute to improved firm-level outcomes.

Although our estimation is underpowered and imprecise, we find no clear evidence for any career advancement effects of reporting to a drinking boss in the female sample. We cannot draw any conclusion from imprecise null results in general, but it is fairly conceivable that female employees may face higher costs in drinking with the boss than male employees because they are more likely to be constrained by family duties or shy away fearing potential sexual harassment. If this is the case, socializing via drinking forms an old boys' club, contributing to the gender gap in the company as Cullen and Perez-Truglia (2023) more clearly showed that it was the case with smoking breaks in their study company.

Our proposed empirical approach is readily adaptable to a variety of organizational settings. Since periodic personnel transfers across divisions and roles are common across industries and countries, they afford researchers a valuable natural experiment to identify causal effects—an approach also highlighted by Cullen and Perez-Truglia (2023). Our theoretical framework, which distinguishes between well- and poorly-informed bosses, is likewise novel in its connection of supervisor-specific information acquisition to subordinate promotion outcomes. This framework can also be applied to organizational contexts along with the empirical exercises we performed to test the preditions derived from the framework. We hope this study illustrates how these methods can deepen our understanding of career dynamics and inform future research.

References

Abegglen, J. (1958). *The Japanese Factory: Aspects of Its Social Organization*. The Free Press.

Agarwal, S., Qian, W., Reeb, D. M., and Sing, T. F. (2016). Playing the boys game: Golf buddies and board diversity. *American Economic Review*, 106(5):272–276.

Aizawa, T., Okudaira, H., Kitagawa, R., Kuroda, S., and Owan, H. (2024). Employee well-being in the digital age: Assessing the impacts of a smartphone application in the workplace. *Economics & Human Biology*, 55:101445.

Aoki, M. (1988). *Information, Incentives and Bargaining in the Japanese Economy: A Microtheory of the Japanese Economy*. Cambridge University Press.

Artz, B. M., Goodall, A. H., and Oswald, A. J. (2017). Boss competence and worker well-being. *IlR Review*, 70(2):419–450.

Auld, M. C. (2005). Smoking, drinking, and income. *Journal of Human Resources*, 40(2):505–518.

Baker, G., Gibbs, M., and Holmstrom, B. (1994). The internal economics of the firm: Evidence from personnel data. *The Quarterly Journal of Economics*, 109(4):881–919. Publisher: Oxford University Press.

Bandiera, O., Barankay, I., and Rasul, I. (2009). Social connections and incentives in the workplace: Evidence from personnel data. *Econometrica*, 77(4):1047–1094.

Chan, T. Y., Li, J., and Pierce, L. (2014). Learning from peers: Knowledge transfer and sales force productivity growth. *Marketing Science*, 33(4):463–484.

Cullen, Z. and Perez-Truglia, R. (2023). The old boys' club: Schmoozing and the gender gap. *American Economic Review*, 113(7):1703–1740.

Deng, J. and Lu, D. (2024). The old boys' club and board gender diversity: Evidence from the anti-corruption campaign in china. *Journal of Economic Behavior & Organization*, 221:626–656.

Dessein, W., Lo, D., and Minami, C. (2022). Coordination and organization design: Theory and micro-evidence. *American Economic Journal: Microeconomics*, 14(4):804–843.

Dessein, W., Lo, D. H.-F., Shangguan, R., and Owan, H. (2024). The management of knowledge work. RIETI Discussion Paper Series 24-E-044.

Dong, X., Hyslop, D., and Kawaguchi, D. (2024). Skill, productivity, and wages: Direct evidence from a temporary help agency. *Journal of Labor Economics*, 42(S1):S133–S181.

Field, E., Jayachandran, S., Pande, R., and Rigol, N. (2016). Friendship at work: Can peer effects catalyze female entrepreneurship? *American Economic Journal: Economic Policy*, 8(2):125–153.

Frakes, M. D. and Wasserman, M. F. (2021). Knowledge spillovers, peer effects, and telecommuting: Evidence from the us patent office. *Journal of Public Economics*, 198:104425.

Frederiksen, A., Kahn, L. B., and Lange, F. (2020). Supervisors and performance management systems. *Journal of Political Economy*, 128(6):2123–2187.

Friebel, G., Heinz, M., and Zubanov, N. (2022). Middle managers, personnel turnover, and performance: A long-term field experiment in a retail chain. *Management Science*, 68(1):211–229.

Gibbons, R. and Waldman, M. (1999). A theory of wage and promotion dynamics inside firms. *The Quarterly Journal of Economics*, 114(4):1321–1358.

Goldin, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review*, 104(4):1091–1119.

Hamilton, V. and Hamilton, B. H. (1997). Alcohol and earnings: Does drinking yield a wage premium? *Canadian Journal of Economics*, pages 135–151.

Hoffman, M. and Tadelis, S. (2021). People management skills, employee attrition, and manager rewards: An empirical analysis. *Journal of Political Economy*, 129(1):243–285.

Ito, T. and Hoshi, T. (2020). *The Japanese Economy*. MIT press.

Kawaguchi, D., Lee, J., Lin, M.-J., and Yokoyama, I. (2023). Is asian flushing syndrome a disadvantage in the labor market? *Health Economics*.

Kawaguchi, D., Owan, H., and Takahashi, K. (2016). Biases in subjective performance evaluation. RIETI Discussion Paper Series 16-E-059.

Kawata, Y. and Owan, H. (2022). Peer effects on job satisfaction from exposure to elderly workers. *Journal of the Japanese and International Economies*, 63:101183.

Kitagawa, R., Kuroda, S., Okudaira, H., and Owan, H. (2021). Working from home and productivity under the covid-19 pandemic: Using survey data of four manufacturing firms. *PLoS One*, 16(12):e0261761.

Kojima, F. and Odahara, H. (2021). Toward market design in practice: A progress report. *The Japanese Economic Review*, pages 1–18.

Kuroda, S. and Yamamoto, I. (2018). Good boss, bad boss, workers' mental health and productivity: Evidence from japan. *Japan and the World Economy*, 48:106–118.

Lazear, E. P., Shaw, K. L., and Stanton, C. T. (2015). The value of bosses. *Journal of Labor Economics*, 33(4):823–861.

Lee, Y. L. (2003). Wage effects of drinking in australia. *Australian Economic Review*, 36(3):265–282.

Lerner, J. and Malmendier, U. (2013). With a little help from my (random) friends: Success and failure in post-business school entrepreneurship. *The Review of Financial Studies*, 26(10):2411–2452.

Liker, J. K. (2004). *The Toyota Way: 14 Management Principles From the World's Greatest Manufacturer*. McGraw-Hill Education.

Lleras-Muney, A., Miller, M., Sheng, S., and Sovero, V. (2022). Party on: The labor market returns to social networks in adolescence. *arXiv preprint arXiv:2210.09426*.

Lo, D., Brahm, F., Dessein, W., and Minami, C. (2022). Managing with style? microevidence on the allocation of managerial attention. *Management Science*, 68(11):8261–8285.

MacDonald, Z. and Shields, M. A. (2004). Does problem drinking affect employment? evidence from england. *Health Economics*, 13(2):139–155.

Markussen, S. and Røed, K. (2017). The gender gap in entrepreneurship–the role of peer effects. *Journal of Economic Behavior & Organization*, 134:356–373.

Metcalfe, R. D., Sollaci, A. B., and Syverson, C. (2023). Managers and productivity in retail. NBER Working Paper 31192.

Minni, V. (2023). Making the invisible hand visible: Managers and the allocation of workers to jobs. CEP Discussion Paper CEPDP1948.

Mullahy, J. and Sindelar, J. (1996). Employment, unemployment, and problem drinking. *Journal of Health Economics*, 15(4):409–434.

Okudaira, H., Kitagawa, R., Aizawa, T., Kuroda, S., and Owan, H. (2024). Middle managers and employee health. RIETI Discussion Paper Series 24-E-053.

Okuyama, Y., Yamaguchi, S., and Murooka, T. (2024). Unpacking the child penalty using personnel data: How promotion practices widen the gender pay gap. Unpublished draft.

Roberts, J. and Shaw, K. L. (2022). Managers and the management of organizations. NBER Working Paper 30730.

Sato, K., Hashimoto, Y., and Owan, H. (2019). Gender differences in career. *Journal of the Japanese and International Economies*, 53:101028.

Sato, K., Kuroda, S., and Owan, H. (2020). Mental health effects of long work hours, night and weekend work, and short rest periods. *Social Science & Medicine*, 246:112774.

Schilbach, F. (2019). Alcohol and self-control: A field experiment in india. *American Economic Review*, 109(4):1290–1322.

Shangguan, R., DeVaro, J., and Hideo, O. (2021). Enhancing team productivity through shorter working hours: Evidence from the great recession. RIETI Discussion Paper Series 21-E-040.

Shue, K. (2013). Executive networks and firm policies: Evidence from the random assignment of mba peers. *The Review of Financial Studies*, 26(6):1401–1442.

Waldman, M. (2012). Theory and evidence in internal labor markets. *Handbook of Organizational Economics*, pages 520–571.

Wang, J., Huang, C., Xu, L., and Zhang, J. (2023). Drinking into friends: Alcohol drinking culture and ceo social connections. *Journal of Economic Behavior & Organization*, 212:982–995.

Yang, B., Chan, T., Owan, H., and Tsuru, T. (2024). Incentives from career concerns in a contract package: An empirical investigation. *Management Science*, 70(9):6093–6116.

Figures and Tables

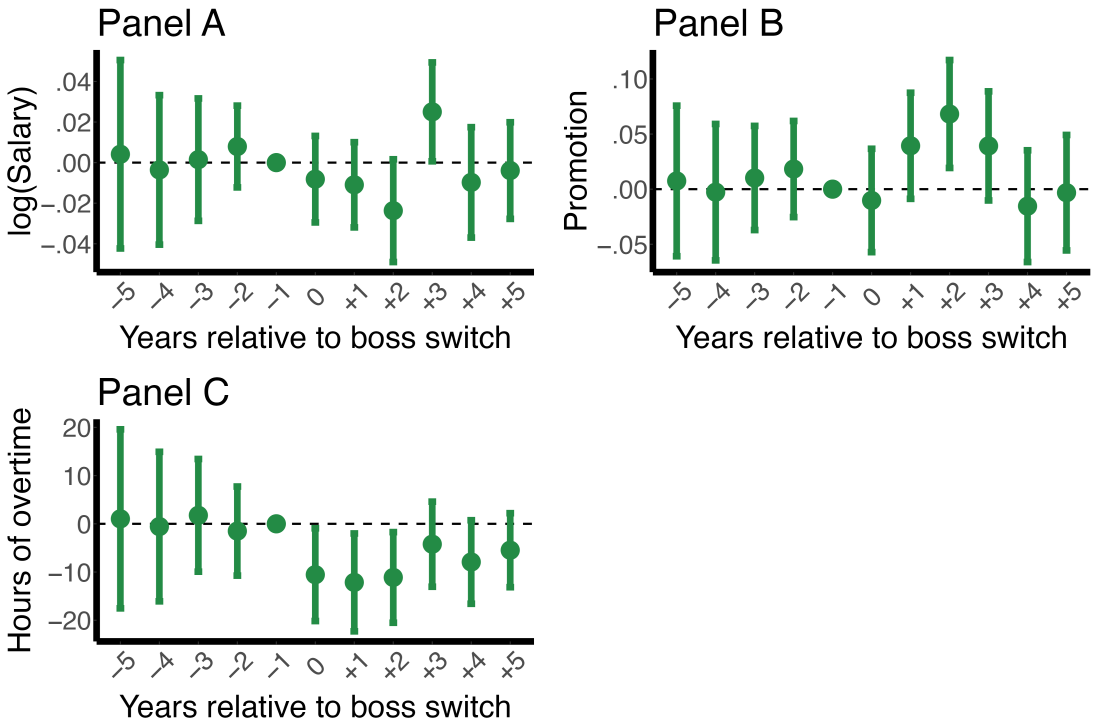


Figure 1: THe Effects of Reporting to Drinking Bosses

Notes: See Section 3.1 for details about the model specification. The regression includes 14,333 employee-year observations of 1,874 unique male employees and 1,024 unique bosses in 2006 to 2019. Each dot represents the estimated effect of reporting to a drinking boss in each event period (estimate of β_s^D). The vertical segments represent the 95 percent confidence intervals. The standard errors are clustered at the individual and boss levels. Period 0 is the exact year when employees start reporting to new bosses. Period -1 is omitted as the baseline in estimation, so the coefficient for period -1 is zero by construction. The outcome variables are the logarithm of annual salary, promotion dummy, and hours of overtime in panels A B, and C, respectively.

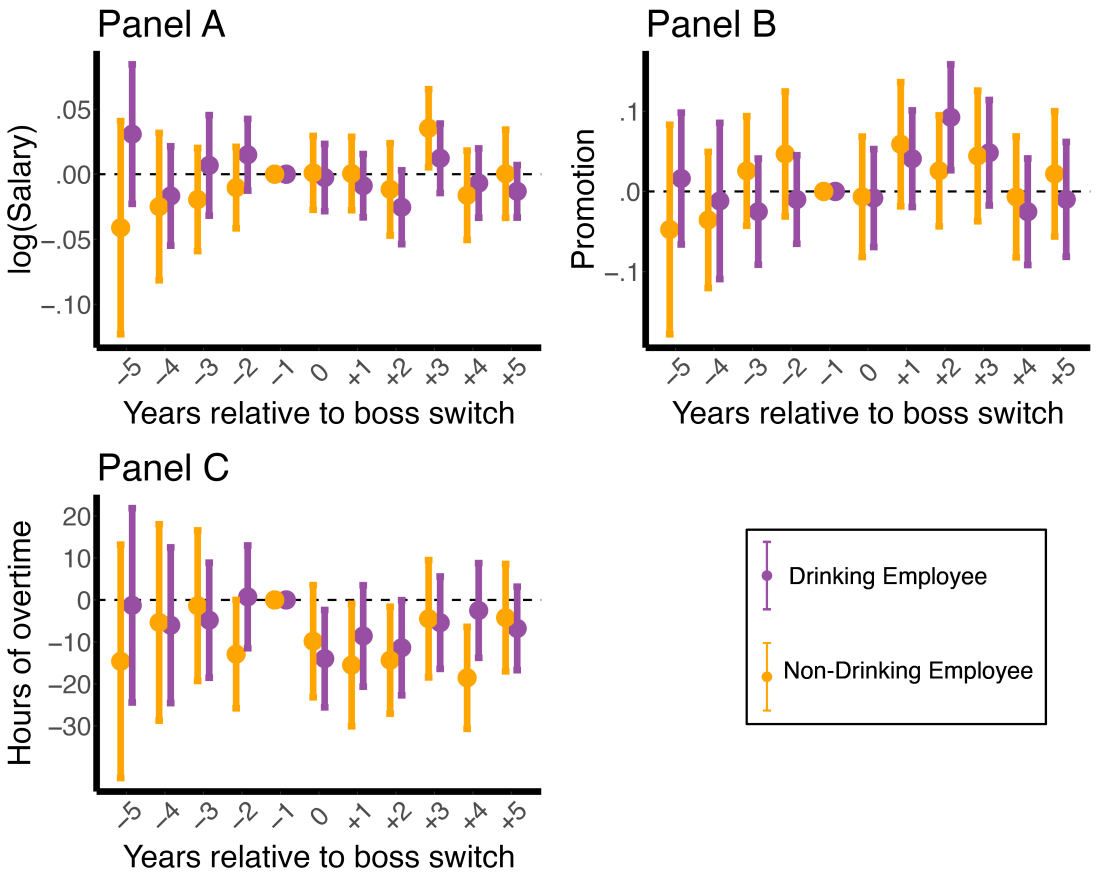


Figure 2: The Effects of Reporting to Drinking Bosses by Employees' Drinking Habits

Notes: See Section 3.1 for details about the model specification. The regression includes 14,333 employee-year observations of 1,874 unique male employees and unique 1,024 bosses in 2006 to 2019. Each dot represents the estimated effect of reporting to a drinking boss in each event period (estimates of β_s^D, θ_s^D). The purple and orange dots represent the effects on drinking and non-drinking employees, respectively. The vertical segments represent the 95 percent confidence intervals. The standard errors are clustered at the individual and boss levels. Period 0 is the exact year when employees start reporting to new bosses. Period -1 is omitted as the baseline in estimation, so the coefficient for period -1 is zero by construction. The outcome variables are the logarithm of annual salary, promotion dummy, and hours of overtime in panels A B, and C, respectively.

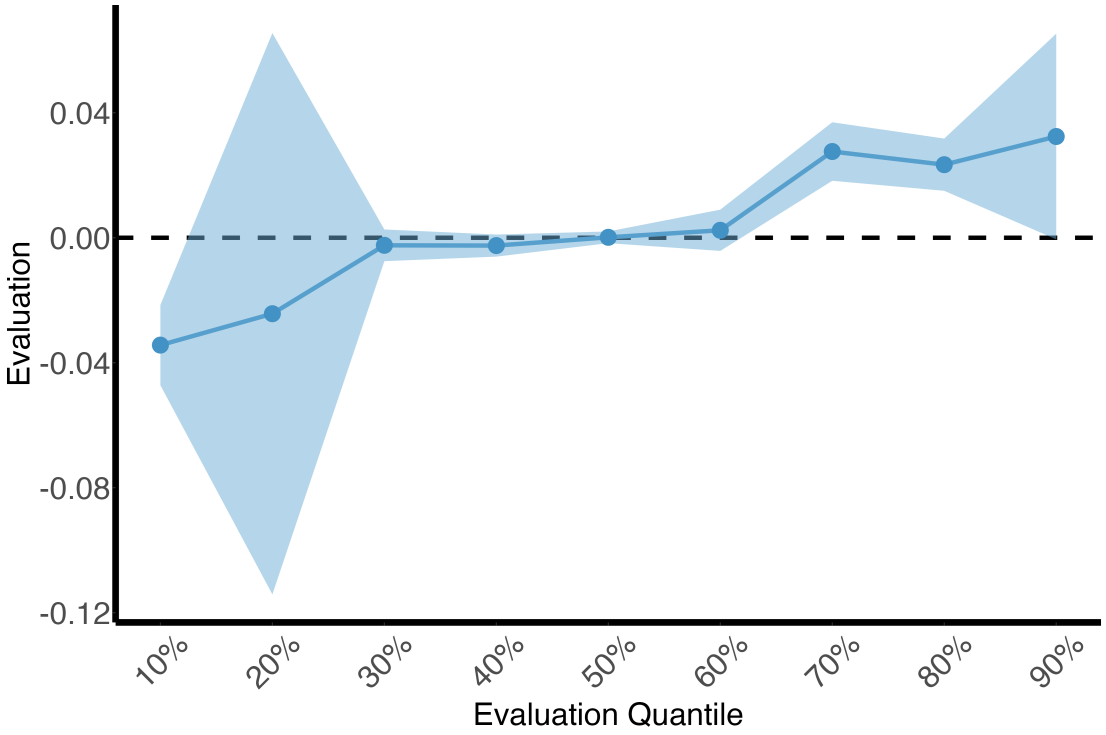


Figure 3: The Effects of Reporting to Drinking Bosses Across Deciles

Notes: See Section 3.4 for details about the model specification. The table shows the estimation results of the quantile regression of employee evaluation on reporting to a drinking boss. The regression includes 14,333 employee-year observations of 1,874 unique male employees and unique 1,024 bosses in 2006 to 2019. Each dot represents the estimated effect of reporting to a drinking boss in each employees evaluation quantile (estimates of ρ_q). The vertical segments represent the 95 percent confidence intervals.

Table 1: The Definition of Drinking Employees and Bosses

	Amount			
Frequency	(a) 0–19 g	(b) 20–39 g	(c) 40–59 g	(d) 60+ g
(i) Hardly	Not (15%)	Not (1%)	Not (0%)	Drinking (0%)
(ii) Sometimes	Not (21%)	Not (19%)	Drinking (9%)	Drinking (4%)
(iii) Every day	Not (7%)	Drinking (14%)	Drinking (7%)	Drinking (3%)

Notes: See Section 2 for details about the definition of drinking workers. This table specifies the definition of drinking workers. Workers are required to answer two questions about their drinking habits as part of the mandatory annual health check. One question asks the frequency of alcohol consumption. The possible answers are (i) hardly (or cannot drink), (ii) sometimes, and (iii) every day. The other question asks the average quantity of alcohol consumption on a day when they drink. The possible answers are (a) less than 20 grams, (b) 20 or more and less than 40 grams, (c) 40 or more and less than 60 grams, and (d) 60 grams or more in pure alcohol. The table defines drinking workers by mapping from two responses to either "Not" (non-drinking employees/bosses) or "Drinking" (drinking employees/bosses). The frequency of employee-year and boss-year observations for each cell are presented in brackets. The frequency is relative to the sum of the numbers of employee-year observations and boss-year observations.

Table 2: Heterogenous Effects of Drinking Bosses

Sources of Heterogeneity \Outcome	Parameter	log(Salary)	Promoted	Hours of Overtime
Whether the employee has a child under 7	θ^D_{DID}: Yes	0.013	0.060	9.74
		(0.027)	(0.039)	(7.90)
	β^D_{DID}: No	−0.017	0.017	−14.04
		(0.014)	(0.018)	(4.44)
Blue-collar worker	θ^D_{DID}: Yes	0.000	0.016	−14.03
		(0.023)	(0.034)	(8.74)
	β^D_{DID} : No	−0.020	−0.106	−8.72
		(0.019)	(0.134)	(5.10)
The span of control	θ^D_{DID}: larger	−0.005	-0.075^{*}	−5.99
		(0.026)	(0.04)	(8.36)
	β^D_{DID} : smaller	−0.007	0.073^{*}	−8.97
		(0.018)	(0.034)	(6.66)
The size of the division	θ^D_{DID} : larger	-0.042^{*}	−0.044	−5.27
		(0.024)	(0.032)	(7.13)
	β^D_{DID} : smaller	0.006	0.044^{*}	-10.47^{**}
		(0.018)	(0.025)	(5.25)
Drinking rate (supervised by same boss)	θ^D_{DID}: higher	0.0542^{**}	0.040	−2.949
		(0.023)	(0.033)	(7.850)
	β^D_{DID}: lower	-0.051^{**}	−0.001	−9.516
		(0.23)	(0.029)	(6.890)
Drinking rate (same division)	θ^D_{DID}: higher	0.028	0.0256	−1.680
		(0.023)	(0.033)	(7.830)
	β^D_{DID}: lower	−0.033	0.003	-12.82^{**}
		(0.021)	(0.029)	(6.43)
The age of the boss	θ^D_{DID} (Age $\geq$ 40)	0.000	0.003	0.54
		(0.002)	(0.003)	(0.66)
	β^D_{DID} (Age $<$ 40)	−0.029	−0.106	−37.31
		(0.116)	(0.134)	(30.62)
Whether the boss has a child under 7	θ^D_{DID}: Yes	−0.01	−0.032	4.249
		(0.039)	((0.047)	(10.471)
	β^D_{DID}: No	−0.015	0.032^{**}	-11.07^{***}
		(0.015)	(0.01)	(4.356)
Whether the boss is female	θ^D_{DID}: Yes	−0.051	−0.155	−55.62
		(0.091)	(0.110)	(35.84)
	β^D_{DID}: No	−0.014	0.026	-12.23^{***}
		(0.014)	(0.017)	(4.25)

Notes: See Section 3.3 for details about the model specification. The regression includes 14,333 employee-year observations of 1,874 unique male employees and unique 1,024 bosses in 2006 to 2019. Each row represents the estimates of β^D_{DID} or θ^D_{DID} in equation (3). The outcome variables are the logarithm of annual salary, promotion dummy, and hours of overtime. The standard errors are clustered at the individual and boss levels. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table 3: Difference in Evaluation Submitted by Drinking and Non-Drinking Bosses

	Drinking Bosses	**Non-Drinking Bosses**	**Statistics**	p-value
$\widehat{\mathsf{E}}(\text{Evaluation}_{i,t}\|\text{Boss type})$	0.011	-0.016	$t = -0.763$	0.445
$\widehat{\mathsf{Var}}(\text{Evaluation}_{i,t}\|\text{Boss type})$	0.883	0.686	$t = 2.836$	0.005^{***}

Notes: The table shows the difference between drinking and non-drinking bosses in their evaluation patterns. $\widehat{\mathsf{E}}(\text{Evaluation}_{i,t}|\text{Boss type})$ represents the sample mean of evaluation scores submitted by each type of bosses. $\widehat{\mathsf{var}}(\text{Evaluation}_{i,t}|\text{Boss type})$ represents the sample variance of evaluation scores submitted by each type of bosses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table 4: Quasi-Poisson Count Model Estimation Result

Outcome	# of Promotions After 2nd Boss Switch	
	(1)	(2)
Variable	Coefficients	Average Marginal Effects
Drinking boss	0.2647^{***}	0.2841^{***}
	(0.0584)	(0.0629)
Blue-collar	-0.0708	-0.0759
	(0.0480)	(0.0518)
Employee age	-0.0029	-0.0031
	(0.0026)	(0.0028)
(Employee age)^2	0.0069^{***}	0.0074^{***}
	(0.0026)	(0.0028)
Employee tenure	0.0077^{***}	0.0083^{***}
	(0.0036)	(0.0039)
(Employee tenure)^2	-0.0016	-0.0017
	(0.0033)	(0.0036)

Notes: The table shows the association between being assigned a drinking boss for the first boss switch and the number of promotions after the second boss switch. See Section 3.4 for details about the model specification. Column (1) shows the maximum-likelihoood estimates of the coefficients of quasi-Poisson model specified in equation 8. Column (2) shows the average marginal effects based on the coefficient estimates. The standard errors are clustered at the individual and boss levels. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Appendix A. Summary Statistics

Table A1: The Summary Statistics

Variable	Mean	SD	min	Max	N
Annual salary (1,000 JPY)	6,900.9	1,652.5	0	10,919.4	14,333
Promotion	0.090	0.285	0	1	14,333
Hours of overtime	75.025	86.843	0	676	14,333
Employee age	40.729	9.104	18	60	14,333
Employee tenure	23.340	3.754	12.9	47.8	14,333
Boss age	47.361	5.481	31	66	14,333
Employee with children under 7	8.708	5.947	0	35	14,333
Bosses with children under 7	0.066	0.248	0	1	14,333
Span of control	0.129	0.335	0	1	14,333
Size of Division	20.526	17.058	1	82	14,333
Drinking rate (supervised by same boss)	0.585	0.293	0	1	14,333
Drinking rate (same division)	0.582	0.210	0	1	14,333
Blue-collar worker	0.388	0.487	0	1	14,333

Notes: Our data set includes 14,333 employee-year observations of 1,874 unique male employees and unique 1,024 bosses in 2006 through 2019. The span of control is defined as the number of employees supervised by the same boss on the year. The size of division is defined as the number of employees in the same division. Blue-collar workers are defined as production-line workers.