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Meetings

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Meetings*

Abstract

Why do we have so many meetings? Few workplace features are so scorned, yet seemingly so necessary. This paper provides the first large-scale economic evidence on workplace meetings using an original survey of more than 9,000 workers linked to matched employer–employee administrative data from Norway. We show that meetings are both common and costly, consuming an average of 12 percent of work hours and 14 percent of firm wage bills. Planning, problem solving, information sharing, and project coordination account for the majority of meeting activity. High-paying and high-revenue firms devote more resources to meetings despite facing a substantially higher opportunity cost of employee time. Meeting frequency and intensity are positively related to worker wage growth. Workers in meeting-intensive firms report greater on-the-job learning, and interactions with more senior colleagues are associated with stronger wage growth, suggesting that knowledge transmission within firms is an important mechanism. Meetings are the broccoli of work – widely disliked, but probably good for us anyway.

JEL classification

J24, J31, M54

Keywords

meetings, communication, coordination, organizational capital, firm organization, wage growth

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— Meetings are indispensable when you don't want to do anything.
John Galbraith (1969)

1 Introduction

Modern work is increasingly organized around collaboration, and the labor market places a growing premium on teamwork and coordination between workers with specialized knowledge and skills (Wuchty et al., 2007; Jones, 2009; Deming, 2017; Løken et al., 2026). Even when workers produce output individually, they often depend on information and expertise from others within the organization. Meetings are a central setting for this coordination and information exchange, yet there are few formal economic studies of meetings.

This paper provides the first large-scale evidence on workplace meetings by combining an individual-level survey of more than 9,000 workers with linked employer–employee administrative data from Norway. The survey measures meeting frequency, usual meeting length, meeting time and purpose, and other dimensions of workplace interaction and team organization. We link these survey responses to longitudinal administrative records containing workers' earnings histories, occupations, employers, and demographic characteristics, together with detailed information on firm employment, revenues, wage bills, and estimated wage premia. This allows us to characterize how meetings are organized across workers and firms and to study how meeting intensity relates to firm performance and worker wage growth.

The average Norwegian worker spends 4.7 hours per week in meetings, 12 percent of the standard 37.5-hour workweek. Among the 60 percent of workers who attend meetings regularly, the average time spent in meetings is about 80 minutes per workday. Combining reported meeting hours with observed wages, we estimate that firms devote roughly 14 percent of their wage bill to meetings, corresponding to about NOK 88,000 (USD 9,000) per employee per year, or approximately NOK 230 billion (USD 24 billion) annually across the Norwegian economy. These estimates are a lower bound on the cost of meetings because they exclude preparation, travel between locations, follow-up work, and the cognitive cost of attention switching.

The central economic question is whether meetings generate coordination benefits large enough to justify their cost. Economic theories of the firm provide a natural rationale for why meetings should exist. Coase (1937) argued that firms arise because some transactions can be organized more efficiently within firms than through the market. Subsequent work models firms as communication networks in which specialization must be balanced against the costs of communication (Bolton and Dewatripont, 1994). In knowledge hierarchies, frontline

workers pass more difficult problems to managers with the expertise to solve them (Garicano, 2000). Later work examines how communication, delegation, and adaptation jointly shape organizational structure (Dessein and Santos, 2006; Garicano and Rossi-Hansberg, 2006; Crémer et al., 2007; Alonso et al., 2008).

Consistent with these insights, a growing empirical literature shows that communication and meetings can improve organizational performance. Bandiera et al. (2020) find that CEOs who spend their time in multi-function, high level meetings are better performers than those who have individual meetings with core functions. Battiston et al. (2021) show that face-to-face communication and physical proximity between managers and workers increases productivity. Sandvik et al. (2020) show in a field experiment that structured advice-giving meetings generate persistent productivity gains in a sales firm. Cai and Szeidl (2018) randomly assign meetings to small firms and show that they improve business performance through learning and collaboration. Our contribution is to move beyond these specific settings by providing systematic, representative, descriptive evidence on the frequency and purpose of meetings and linking them to firm wage premia, revenues, and worker wage trajectories.

The literature offers three distinct perspectives on the economic role of meetings. One view, primarily from organizational psychology, emphasizes and attempts to quantify the cognitive and time costs of meetings. Meetings consume time, fragment attention, and may be generated by bureaucracy or weak managerial discipline. For example, research in psychology and human-computer interaction shows that the task-switching cost of meetings increases fatigue and stress (Luong and Rogelberg, 2005; Rogelberg et al., 2006; Mark et al., 2008; Leroy, 2009). This perspective predicts a negative correlation between meeting frequency (intensity) and firm performance. Another view is that meetings create norms, voice, trust, psychological safety, and a shared sense of responsibility (Edmondson, 1999; Guiso et al., 2015). Here, meetings improve performance primarily because they strengthen organizational culture and interpersonal relationships. A third view treats meetings as costly investments in the information flows, relationships, and problem-solving structures that make specialized production possible (Prescott and Visscher, 1980; Atkeson and Kehoe, 2005). From this perspective, meetings are the cost an organization pays to facilitate communication, knowledge sharing, and coordination in complex organizations.

These three perspectives are not mutually exclusive, but they imply different purposes of meetings and different predicted relationships between meeting frequency and organizational performance. Overall, our evidence is most consistent with the third view, that meetings represent costly investments in organizational capital. We find that firms differ systematically in how intensively they rely on meetings and that these differences are closely related to firm

revenue and wage premia and workers' wage growth.

We begin by documenting five facts about how meetings are organized within firms. First, we show that meetings are widespread and economically important, with firms devoting roughly 14 percent of their wage bill to meeting time. Second, we find substantial heterogeneity in meeting participation across workers, occupations, firms, industries, and local labor markets. Managers and professionals spend substantially more time in meetings than other workers, while differences by age, gender, and other demographic characteristics are comparatively small.

Third, we show that the most commonly reported purposes of meetings are planning and strategy, collaboration and problem solving, project updates, and information sharing. Administration, networking, and informal discussion are reported substantially less frequently. These patterns are remarkably stable across occupations, industries, and work arrangements, suggesting that meetings play a similar coordination role across very different production settings. Fourth, we show that while organizations differ substantially in the amount of time devoted to meetings, workers' assessments of meeting quality and productivity exhibit comparatively little variation. Firms therefore differ primarily in the intensity with which they rely on meetings rather than in employees' perceptions of the effectiveness of individual meetings.

Fifth, we show that firm effects explain a substantial share of the variation in meeting intensity. Based on the adjusted R^2, firm effects explain 11 percent of the variation in meeting frequency, 19 percent of the variation in weekly meeting hours, 17 percent of the variation in meeting time on office days, and 25 percent of the variation in meeting time on work-from-home days. By contrast, firm effects explain substantially less variation in broader measures of workplace climate and perceived meeting productivity. This suggests that meeting practices are an important dimension of organizational design.

Having documented these five descriptive facts, we next ask whether differences in meeting practices are related to firm and worker outcomes. We begin by relating meeting practices to firm-level outcomes, focusing on firm wage premia estimated within an AKM framework, as well as revenue and revenue per worker. Meetings are substantially more prevalent at higher-paying firms and higher-revenue firms, and the relationship is especially steep at the top of the firm-premium and revenue distribution. The relationship with firm wage premia is particularly noteworthy because higher-paying firms face a greater opportunity cost of meetings since worker time is more expensive. This is difficult to reconcile with a view that meetings primarily reflect organizational inefficiency or waste.

We then ask whether this relationship is specific to meetings or whether it reflects broader differences in workplace quality. High-paying and high-revenue firms may also be better

organized workplaces, with more supportive teams, clearer roles, and stronger workplace culture. We find little evidence for this explanation. Unlike meeting intensity, workplace climate measures such as role clarity, shared responsibility, team support, and connectedness are largely unrelated to firm wage premia or firm revenue. High-paying and high-revenue firms have more frequent meetings but have otherwise similar workplace practices as other firms. This pattern is difficult to reconcile with the view that high-paying and high-revenue firms have more meetings because they are more invested in organizational culture and employees' psychological safety (e.g., Edmondson, 2014).

Finally, we turn from firms to workers and ask whether meeting practices are related to workers' careers. Meeting intensity strongly predicts wage growth even after controlling for worker characteristics, occupations, sectors, firms, and baseline wages. A one-standard-deviation increase in weekly meeting hours is associated with a 0.47 percentile-point increase in annual wage-rank growth. By contrast, broader measures of the workplace climate are weakly related or unrelated to wage growth. Moreover, meetings are a stronger predictor of wage growth than concentrated individual work, administrative tasks, training, travel, email, and other observed workplace activities. Taken together, these patterns are most consistent with meetings as investments in organizational capital rather than as organizational waste or workplace culture investments.

Our results do not establish a causal return to meetings. Workers with higher ability, greater ambition, or more complex responsibilities may sort into meeting-intensive jobs and firms, and firm fixed effects do not eliminate differences in task assignment within firms. Rather, our main contribution is to introduce workplace meetings as an object of study in economics and to understand them as investments in organizational capital. By documenting the prevalence, purpose, and economic correlates of workplace meetings, we provide the first systematic evidence on this central dimension of firm organization. We contribute to the literature that studies how management practices are related to firm performance (e.g., Bloom and Van Reenen, 2007; Bloom et al., 2012, 2013; Bender et al., 2018). Our results also inform the literature on specialization and coordination within firms by providing systematic evidence about a coordination technology from inside the firm (e.g., Becker and Murphy, 1992; Løken et al., 2026).

2 Data and Measurement

This section describes the data and measurement framework. Our analysis combines two complementary data sources: comprehensive administrative registers covering the universe of workers and firms in Norway and a large-scale workplace survey that provides detailed

information on meetings, workplace interactions, collaboration, organizational climate, and work organization. The administrative data allow us to study wages, careers, and firm characteristics over time and at scale, while the survey captures dimensions of workplace communication and coordination that are not observable in administrative records. Norway is particularly well suited for this analysis because population-wide linked employer–employee records can be merged with detailed survey responses, allowing us to observe both the organization of meetings and subsequent worker and firm outcomes.

2.1 Survey and administrative data

Administrative Data. Our primary data source consists of linked administrative registers maintained by Statistics Norway, covering the universe of workers and firms. The registers contain annual information on workers' earnings, employment status, occupations, education, demographic characteristics, and geographic location. Workers can be followed over time and across employers, allowing us to study career trajectories, wage growth, and mobility within and between firms. Our analysis draws on the 2022–2024 period.

The administrative data also provide detailed information on firms, including firm identifiers, structure, industry classification, employment, revenues, profits, and wage bills.[1]

The administrative data serve three purposes. First, they provide detailed worker and firm characteristics used to describe how meetings vary across individuals, occupations, industries, and firms. Second, they allow us to characterize firm outcomes, including firm wage premia estimated using the conventional AKM framework (Abowd et al., 1999), revenue, and revenue per worker, and examine how meeting intensity varies with these outcomes across firms. Third, the longitudinal earnings records allow us to measure worker wage growth, enabling us to relate meeting practices at a given time to later labor-market outcomes. We match respondents to their employer in 2024, the most recent year for which employer information is available, and measure firm size in that year. Other firm characteristics are measured in 2023, the most recent year for which accounting and wage data are available. These include revenue, revenue per worker, labor share, capital intensity, and the firm wage premium. Worker wage growth is measured between 2022 and 2023. Because meeting practices are measured in the 2025 survey, the wage-growth analysis relies on the assumption that workers' meeting environments are persistent over time. We return to this below. Appendix Table A.1 reports summary statistics for the main administrative variables used in

[1]Industry and occupation are coded using Statistics Norway's standard classifications. Industries are measured using the 21 sections of SN2007, Norway's implementation of NACE Rev. 2, and occupations using STYRK-08, Norway's implementation of ISCO-08. Unless otherwise noted, occupation is measured at the three-digit level. See Statistics Norway's SN2007 and STYRK-08 classifications at https://www.ssb.no/klass/klassifikasjoner/6/versjon/30/koder and https://www.ssb.no/klass/klassifikasjoner/7.

the analysis, measured over the regression sample.

Survey Data. The workplace survey was conducted by Norstat from May to July in 2025. Norstat is the largest survey provider in Scandinavia, and sampled approximately 10,000 individuals who worked at least 20 hours a week at the time of the survey. The response rate is approximately 90 percent, owing to the fact that Norstat relies on their own continuously-maintained online panel and provides financial incentives for participating.

Survey respondents differ somewhat from the administrative population in observable characteristics, as shown in Appendix Table A.2. They are more likely to hold a college degree and to be union members, are about half as likely to be immigrants, and are slightly older, while gender and marital status are broadly similar. Respondents also earn somewhat higher wages and are more likely to work in larger firms, in the public sector, and at firms with higher wage premia. Such positive selection is common in voluntary worker surveys (Silliman and Willén, 2025). At the same time, respondents are disproportionately drawn from occupations and firms in which meetings and coordination are central to production, making them particularly informative for our research question.

As a robustness check, we perform an exercise in which we reweigh the survey to match the administrative population on observable worker characteristics when we study wage rank growth. The weighted results are very similar to our main unweighted estimates and are reported in the Appendix Table A.4.

The survey collects detailed information on meetings and workplace interactions. Respondents report how frequently they attend meetings, how much time they spend in meetings during a typical week, and how much meeting time is spent on planning and strategy, project updates, information sharing, problem solving, administrative tasks, and informal discussion. The survey also records the composition of meetings, including the extent to which workers meet with supervisors, senior colleagues, junior colleagues, and peers.

Beyond meeting frequency and content, the survey measures workers' perceptions of meetings and their broader workplace environment. Respondents report perceived meeting productivity, collaboration with coworkers, role clarity, shared responsibility, team support, workplace connectedness, and other aspects of organizational climate. In addition, detailed time-use modules record how workers allocate their workday across meetings, concentrated individual work, administrative tasks, collaboration, and formal training.

Appendix Table A.3 reports summary statistics for the main survey variables used in the analysis.

2.2 Measuring Meetings

The workplace survey contains several complementary modules describing workplace meetings, interactions, and work organization. Here, we briefly describe the principal measures used in the paper. We provide the full survey questionnaire in the Appendix C.

Meeting frequency. We measure meeting frequency by asking respondents how often they take part in meetings that involve coordination or team collaboration, with responses recorded on a five-point frequency scale. This measure captures the regularity of meeting participation independent of meeting duration.

Meeting duration. We measure meeting duration by asking respondents how many hours they typically spend in meetings during a work week. We complement this measure with detailed time-use questions that record meeting time during respondents' most recent office and work-from-home days. Respondents who report no meetings on the reference day are assigned zero meeting hours.

Meeting productivity. Respondents who attend meetings evaluate the productivity of those meetings on a Likert scale from 1 to 10. This measure captures workers' subjective assessments of the value of meeting time and is available for all respondents who report that they participate in meetings.

Meeting activities. We record the activities undertaken during meetings. Respondents may select multiple categories, indicating whether meetings involve planning and strategy; collaboration, brainstorming, or problem solving; project updates; presentations or information sharing; administrative topics; training or skills development; feedback or appraisal; networking; or informal conversation. These measures allow us to characterize the organizational functions that meetings serve.

Teamwork and collaboration. The survey contains several measures of teamwork and collaboration. These include active collaboration, role clarity within teams, shared responsibility, and team support, each rated on a 1–10 scale, as well as involvement in teamwork, rated on a 1–5 Likert scale. To summarize these measures, we also construct an overall collaboration index based on active collaboration, role clarity, shared responsibility, and team support.

Coworker interactions. Respondents report how much time they spend interacting with coworkers at different seniority levels, including coworkers of the same seniority, more senior coworkers, and more junior coworkers. We also measure respondents' sense of connectedness to their colleagues using the standard seven-point Inclusion of Other in the Self (IOS) overlapping-circles measure.

Perceived learning outcomes. The survey also measures respondents' perceptions of their own recent skill development and the effectiveness of teamwork. On 1–10 scales, re-

spondents report whether, over the past year, they have learned new skills, further developed existing skills, and become better at their job. We use the self-reported learning measures as subjective outcomes when examining the relationship between meetings and on-the-job learning.

Time use. Finally, the survey contains detailed workday time-use modules that record how respondents allocate their most recent office and work-from-home day across meetings, email and communication, concentrated individual work, administrative tasks, teaching or presentations, training, travel, informal conversation, breaks, and other activities. These measures are used to compare the predictive content of meetings with alternative uses of work time.

2.3 Firm wage premia and worker wage growth.

Our primary firm-level outcome is firm wage premium. We estimate firm fixed effects using the two-way fixed-effects framework of Abowd et al. (1999), correcting for limited mobility bias. Specifically, we estimate

$$w_{it} = X_{it}\beta + \alpha_i + \psi_{J(i,t)} + \varepsilon_{it},$$

where w_{it} denotes log annual earnings, X_{it} includes a fourth-order polynomial in age, α_i denotes worker fixed effects, and $\psi_{J(i,t)}$ is the firm fixed effect. Firm effects are estimated on the largest connected set of workers with flexible controls for life-cycle wage profiles. Following Lachowska et al. (2023), we use the estimated effects directly without empirical Bayes shrinkage. Throughout the paper, we refer to the estimated firm effects as firm wage premia. These capture persistent differences in wages paid by firms after accounting for worker heterogeneity, but do not directly measure firm performance. We therefore complement the wage-premium analysis with two measures of firm performance: revenue and revenue per worker. These measures are obtained from the firm accounting data and merged with the survey data through firm identifiers.

Our primary worker-level outcome is wage growth. Using the longitudinal earnings records, we follow survey respondents in 2022 and 2023 and measure changes in both log annual earnings and workers' positions in the national wage distribution. Our preferred specification uses changes in wage rank, measured in percentiles, which facilitates comparisons across workers at different points of the earnings distribution. Because workers beginning lower in the wage distribution have mechanically greater scope for upward mobility, we condition on baseline (prior-year) log wages. Our specifications also include gender, education, age, immigrant status, marital/cohabitation status, union membership, and municipality of

residence, together with sector, occupation, and firm fixed effects. Because meeting practices are measured in the 2025 survey, this analysis relies on the assumption that workers' reported meeting environments are informative about their meeting environments in earlier years.

3 Facts about Meetings

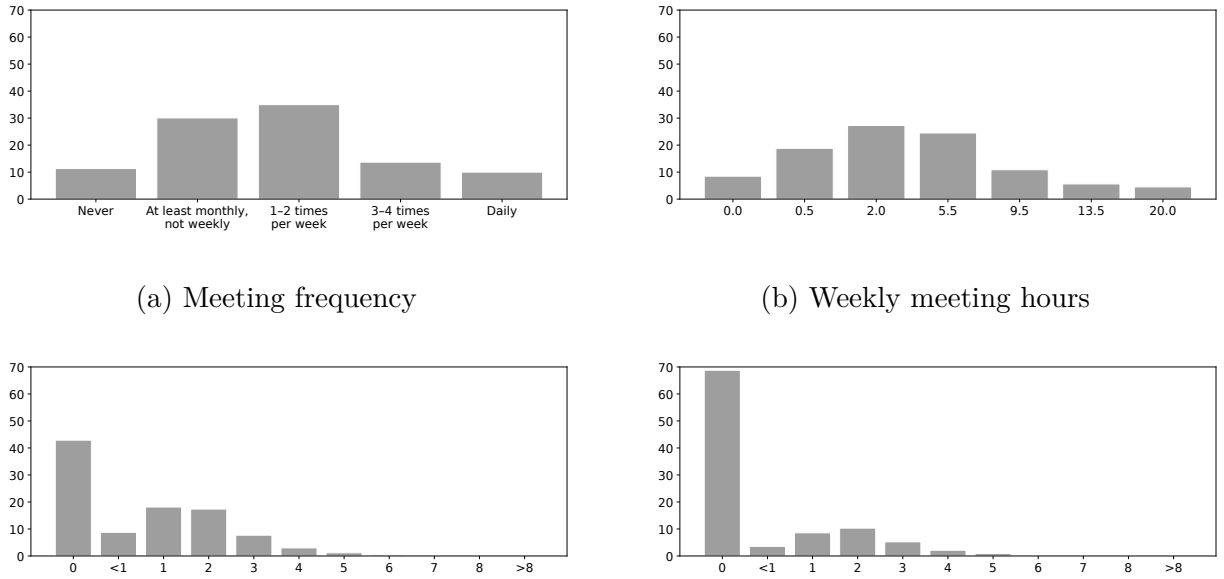
3.1 Meetings are widespread and costly

We begin by documenting the prevalence of meetings in the workplace. Figure 1 reports the distributions of meeting frequency, weekly meeting hours, and meeting time during a typical workday. Three results emerge. First, meetings are nearly ubiquitous: the vast majority of workers participate in meetings at least weekly, and many attend meetings multiple times per week. Second, workers devote a substantial amount of their working time to meetings. The average worker spends approximately 4.7 hours per week in meetings, 12 percent of the standard 37.5-hour workweek. Third, there is considerable heterogeneity across workers. While about 40 percent of workers meet less than once per week, 21 percent devote more than 8 hours per week to meetings. These patterns are mirrored in workers' daily time allocation. Figure 1 shows that, on a typical office day, meeting time ranges from no meetings at all to several hours, with substantial mass throughout the distribution. Among the 60 percent of workers who attend meetings regularly, the average time spent in meetings is about 80 minutes per workday.

The amount of labor devoted to meetings represents a substantial organizational expenditure. To quantify this investment, we combine workers' reported meeting hours with administrative earnings records to estimate the labor cost of meeting time. We estimate the annual labor cost of meetings for each firm by combining workers' reported meeting hours, observed wages, and firm employment, and then aggregate these estimates across firms. The resulting estimates imply that the average employee accounts for approximately NOK 88,000 (USD 9,000) annually in meeting time and that meetings account for an economy-wide wage bill of approximately NOK 230 billion (USD 24 billion), or approximately 14 percent of the total wage bill.

Figure 2, Panel (a) shows the distribution of meeting costs as a share of the firm wage bill: most firms devote roughly 5 to 15 percent of their wage bill to meetings. Panel (b) shows that the average meeting-cost share varies widely across industries: it is highest in knowledge- and coordination-intensive service industries such as finance and insurance, information and communication, professional services, and public administration (around 20

Figure 1: Meeting Prevalence and Time Use



(a) Meeting frequency

(b) Weekly meeting hours

(c) Meeting time on office days

(d) Meeting time on work-from-home days

Notes: Panel (a) reports how frequently workers attend meetings and Panel (b) how many hours per week they spend in meetings; Panels (c) and (d) report meeting time on a selected in-office day and a selected work-from-home day. In each panel the bars show the percent of respondents. Meeting frequency is reported on a five-point scale (never; at least monthly but not weekly; 1–2 times per week; 3–4 times per week; daily). Weekly meeting hours are reported in seven categories (no meetings; less than 1 hour; 1–3 hours; 4–7 hours; 8–11 hours; 12–15 hours; more than 15 hours), which we convert to hours at each category's midpoint, with the top category set to 20 hours. For the office- and work-from-home-day measures, respondents select a recent office (or work-from-home) day, indicate the activities they did, and report meeting time that day in hourly categories (under 1 hour; 1, 2, 3, 4, 5, 6, 7, or 8 hours; more than 8 hours); days without any meeting are coded as zero hours. The full question wording and response options are reproduced in the survey questionnaire in Appendix C. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

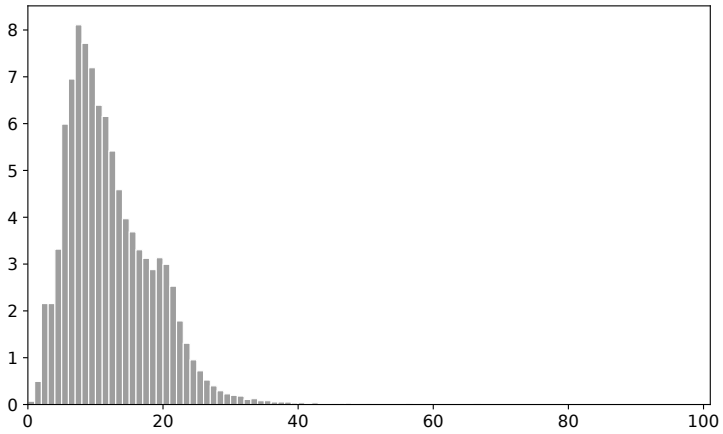
percent), and lowest in transport, agriculture, and wholesale and retail trade (under 10 percent). These estimates account only for the opportunity cost of employees' time and exclude other costs associated with organizing and conducting meetings such as preparation, scheduling, switching costs, travel, and meeting infrastructure.

Overall, these descriptive facts suggest that meetings consume a substantial share of worker time and firms' labor expenditures.

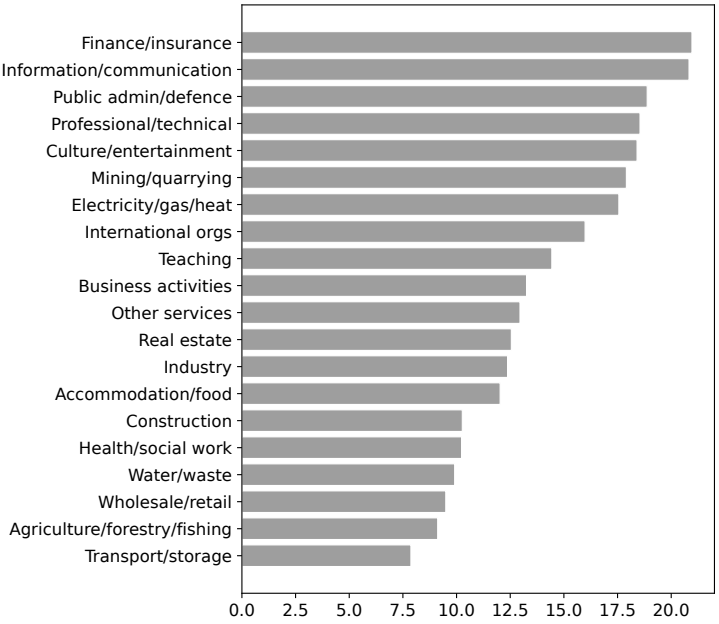
3.2 Who participates in meetings?

Having shown that meetings represent a substantial investment of organizational resources, we next examine how meeting participation varies across workers, firms, and labor markets. Figures 3, 4, B.1, and Appendix Figure 5 summarize the relationship between meeting

Figure 2: Labor Cost of Meeting Time



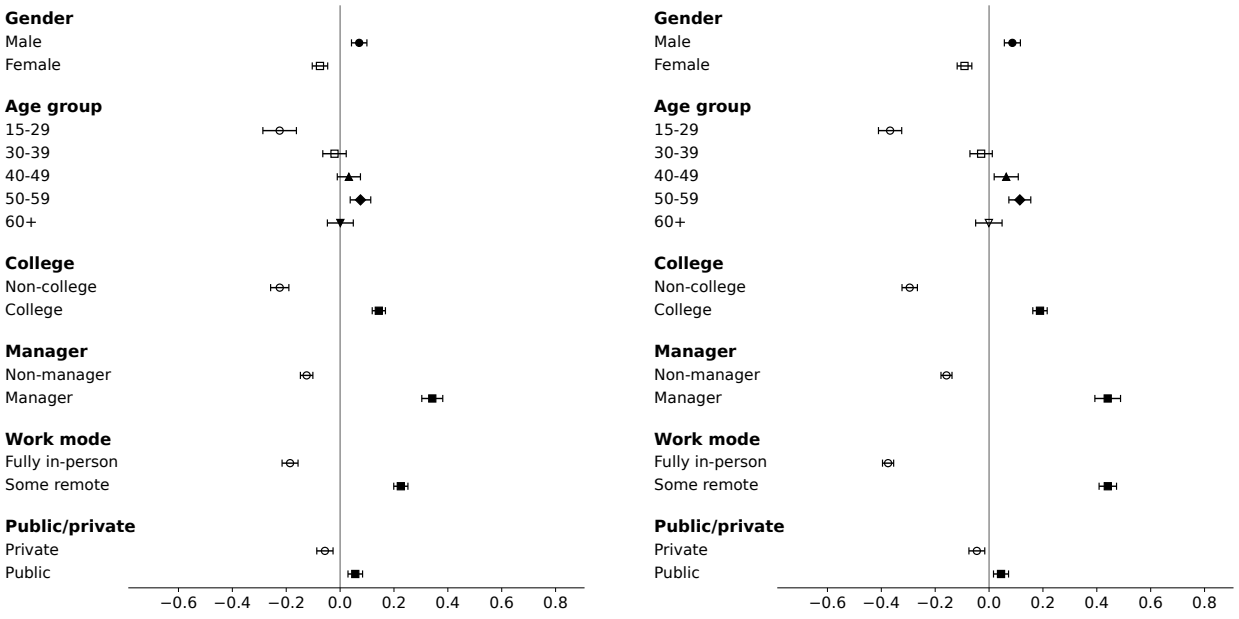
(a) Share of wage bill, across firms



(b) Share of wage bill, by sector

Notes: The figure reports the labor cost of meeting time as a percent of the firm's wage bill; the unit of observation is the firm (enterprise). For each firm, meeting cost is the sum over its workers of the worker's hourly wage times weekly meeting hours, divided by the firm's annual wage bill. Meeting hours are the weekly hours workers report spending in meetings; for workers who did not take the survey, meeting hours are imputed from cell means defined by sector (the 21 NACE sections) and two-digit STYRK-08 occupation, so the measure covers the firm's full workforce. Panel (a) shows the distribution of this share across the 55,464 firms with at least five employees; the horizontal axis is meeting cost as a percent of the wage bill and the vertical axis is the percent of firms. Panel (b) shows the mean, as a percent of the wage bill, by sector. Wages and the wage bill are measured in 2023. Meeting hours are from the surveyed workers; wages and employment are from Statistics Norway.

Figure 3: Meeting Intensity by Worker Characteristics



(a) Meeting frequency

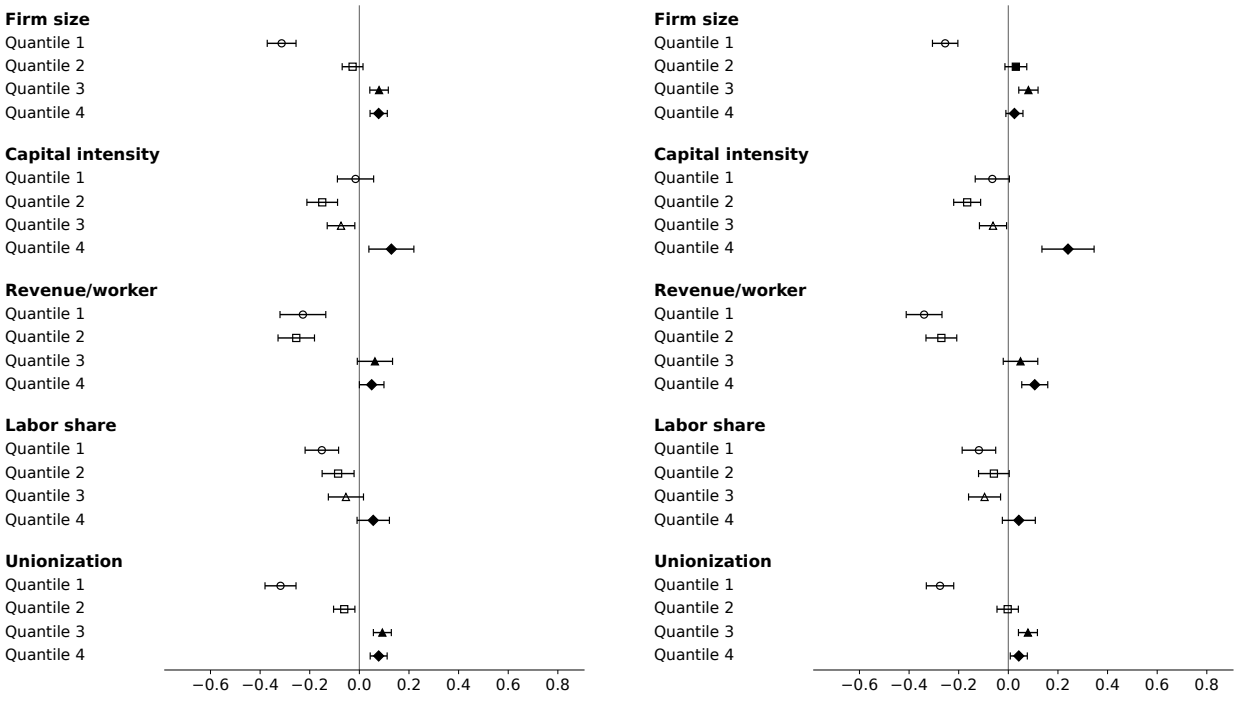
(b) Meeting hours

Notes: Each panel plots subgroup means of a standardized meeting measure across worker characteristics, with 95 percent confidence intervals. Panel (a) is meeting frequency, from the survey question "How often do you take part in meetings that involve coordination or team collaboration?", and panel (b) is weekly meeting hours, from "On average, how much of your work week is spent in meetings?". Each measure is standardized to mean zero and unit standard deviation across workers, so zero denotes the average worker. The worker characteristics are gender, age group, college education, managerial status, work mode, and public- versus private-sector employment. Work mode is "fully in-person" for workers who work only on site and "some remote" for any remote or hybrid arrangement. Markers are hollow when the subgroup mean lies below the average worker and filled when above; marker shape denotes the ordered category within a variable. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

frequency and weekly meeting hours and a broad range of worker, firm, and local labor market characteristics. Appendix Figures B.3, B.4, and B.5 show the corresponding associations for meeting time on office and work-from-home days across worker, firm, and local labor market characteristics. The patterns are similar.

We begin with worker characteristics. Meeting participation differs substantially across workers' organizational roles. Managers attend meetings far more frequently and spend substantially more time in them than non-managerial employees. College-educated workers are also more meeting-intensive than workers without a college degree, and meeting intensity is systematically higher among professional and technical occupations than among production and manual occupations. Workers in hybrid and remote work arrangements also spend more time in meetings than workers who are primarily office-based, suggesting that formal meetings partly substitute for informal workplace interactions. Meeting participation

Figure 4: Meeting Intensity by Firm Characteristics



(a) Meeting frequency

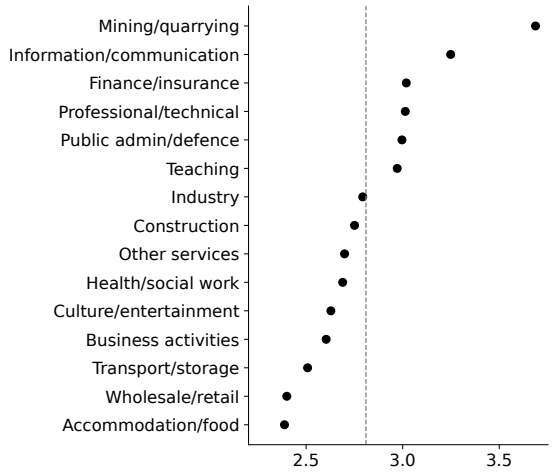
(b) Meeting hours

Notes: Each panel plots subgroup means of a standardized meeting measure across firm characteristics, with 95 percent confidence intervals. Panel (a) is meeting frequency, from the survey question "How often do you take part in meetings that involve coordination or team collaboration?", and panel (b) is weekly meeting hours, from "On average, how much of your work week is spent in meetings?". Each measure is standardized to mean zero and unit standard deviation across workers, so zero denotes the average worker. The firm characteristics are firm size, capital intensity, revenue per worker, labor share, and unionization. Firm size, capital intensity, revenue per worker, labor share, and unionization are grouped into quartiles (1 to 4, from lowest to highest), with cutoffs computed in the administrative data. The labor-share quartiles are formed among employer firms with a positive wage bill. Markers are hollow when the subgroup mean lies below the average worker and filled when above; marker shape denotes the ordered category within a variable. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

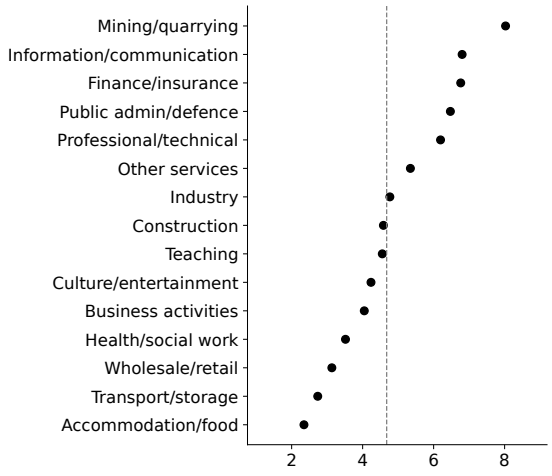
is lower among the youngest workers (under 30), while differences across older age groups are modest. By contrast, meeting participation differs little by public-sector employment or gender.

Taken together, these patterns suggest that meeting intensity is closely related to workers' roles in the production process. Meetings are concentrated among managers, more educated workers, and workers in professional and technical occupations, whose jobs are likely to involve greater coordination and information exchange, while the lower meeting intensity among younger workers suggests that meetings become more important as workers gain experience and responsibility. The greater meeting intensity among remote workers is consistent with formal meetings partly substituting for informal workplace interactions. By

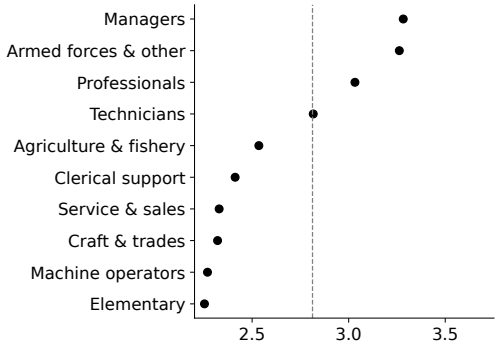
Figure 5: Meeting Intensity by Sector and Occupation



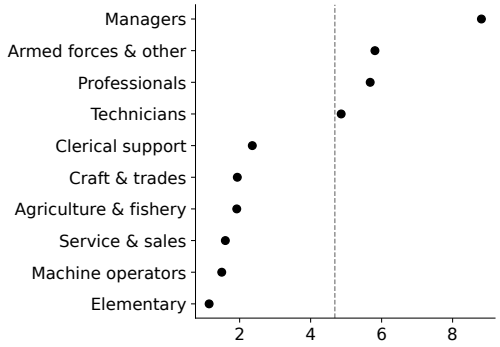
(a) Meeting frequency, by sector



(b) Meeting hours, by sector



(c) Meeting frequency, by occupation



(d) Meeting hours, by occupation

Notes: Each point is the group mean of a meeting measure, and the dashed line marks the overall sample mean. Panels (a) and (b) group workers by sector (the 21 NACE sections) and panels (c) and (d) by one-digit STYRK-08 occupation; sectors with fewer than 100 respondents are omitted. Panels (a) and (c) are meeting frequency, from the survey question "How often do you take part in meetings that involve coordination or team collaboration?", and panels (b) and (d) are weekly meeting hours, from "On average, how much of your work week is spent in meetings?". The abbreviated sector labels denote: Accommodation/food (accommodation and food service); Business activities (business services); Construction (construction); Culture/entertainment (cultural activities, entertainment and leisure); Finance/insurance (finance and insurance); Health/social work (health and social services); Industry (industry); Information/communication (information and communication); Mining/quarrying (mining and extraction); Other services (other services); Professional/technical (professional, scientific and technical services); Public admin/defence (public administration and defence); Teaching (teaching); Transport/storage (transport and storage); and Wholesale/retail (wholesale and retail trade, and repair of motor vehicles). The abbreviated occupation labels denote: Managers (managers); Armed forces & other (armed forces occupations and unspecified); Professionals (professionals); Technicians (technicians and associate professionals); Clerical support (clerical support workers); Service & sales (service and sales workers); Agriculture & fishery (skilled agricultural, forestry and fishery workers); Craft & trades (craft and related trades workers); Machine operators (plant and machine operators and assemblers); and Elementary (elementary occupations). The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

contrast, meeting participation varies little by gender or public-sector employment.

Meeting participation also varies systematically across firms, as shown in Figure 4. Workers in larger firms generally spend more time in meetings, although the relationship is not monotonic across firm-size quartiles. Meeting intensity is also higher at more capital-intensive firms and at firms with higher revenue per worker, and somewhat higher in more heavily unionized workplaces, while it varies little with the firm's labor share. Meeting intensity is therefore not simply higher in firms where labor accounts for a larger share of production, but instead varies with other features of how production is organized. Taken together, these patterns are consistent with meetings playing a larger role in firms with greater organizational complexity and coordination needs. Such firms may require more deliberate communication to coordinate workers, production activities, and organizational decisions.

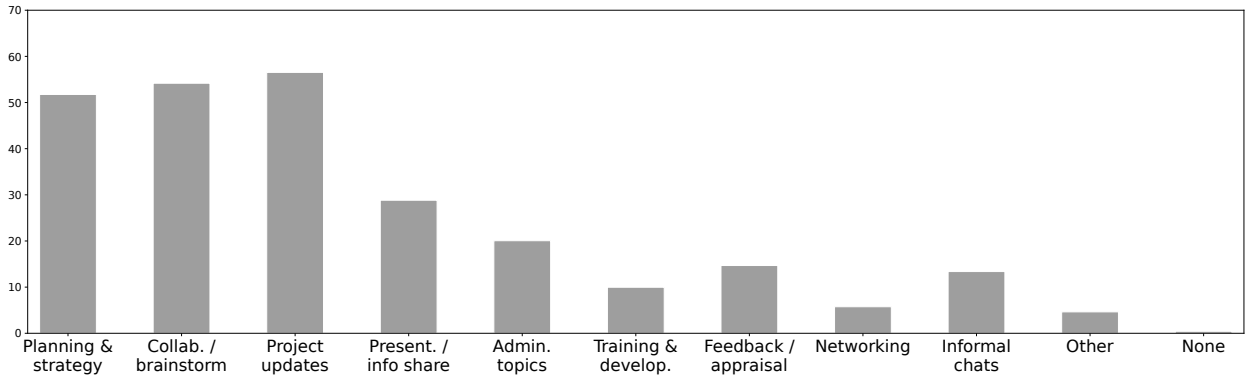
Beyond these differences across firms, meeting intensity also varies substantially across industries (Appendix Figure 5). Finance, information and communication, professional services, and public administration are among the most meeting-intensive sectors, whereas retail, transportation, accommodation, and many production industries devote substantially less time to meetings. These differences show that meetings are concentrated in particular types of production rather than being used uniformly across the economy.

Overall, these patterns suggest that meeting intensity is closely linked to how firms organize production. Meetings are more prevalent in larger firms and in sectors where production is likely to require substantial communication and coordination across workers. While descriptive, these patterns are consistent with firms using meetings to facilitate coordination rather than meetings being a common organizational practice adopted uniformly across workplaces.

Finally, meeting participation exhibits meaningful variation across local labor markets, shown in Figure B.1.[2] Workers in less concentrated local labor markets spend considerably more time in meetings than workers in more concentrated ones. Meeting time is also higher in more educated, more urban, and higher-unemployment labor markets. These characteristics capture potentially different features of the local environment, including the availability and composition of workers and the degree of competition among employers. Because these features are closely related across labor markets, however, it is difficult to assign the differences in meeting intensity to any one mechanism. The results nevertheless show that

[2]Local unemployment is the municipal registered-unemployment rate as a share of the labor force (NAV); local education is the share of college-educated individuals in the municipality; and urban is an indicator for residence in one of the major Norwegian cities (Oslo, Bergen, Trondheim, Stavanger, Bærum, Kristiansand, Drammen, Fredrikstad, Sandnes, Tromsø, and Bodø). Labor-market concentration is an employer Herfindahl–Hirschman index, computed as the sum of squared firm employment shares within two-digit-occupation × municipality cells over the full population of main jobs and rank-transformed to $[0, 1]$, following Silliman and Willén (2025).

Figure 6: Meeting Activities



Notes: Bars show the percent of respondents selecting each type of meeting activity, from the survey question "You mentioned 'meeting' as one of the activities. What type of meeting(s) was this?"; respondents could select all activities that apply, so the shares sum to more than 100 percent. The abbreviated activity labels denote: Planning & strategy (planning and strategy discussions); Collab. / brainstorm (collaborative work, brainstorming and problem-solving); Project updates (project and task updates); Present. / info share (presentations and information sharing); Admin. topics (administrative topics); Training & develop. (training or skill development); Feedback / appraisal (feedback and appraisal); Networking (networking); Informal chats (informal conversations); Other (other); and None (none of these). The sample is the survey respondents who reported attending a meeting.

meeting intensity varies systematically not only across workers and firms, but also across the local labor markets in which firms operate.

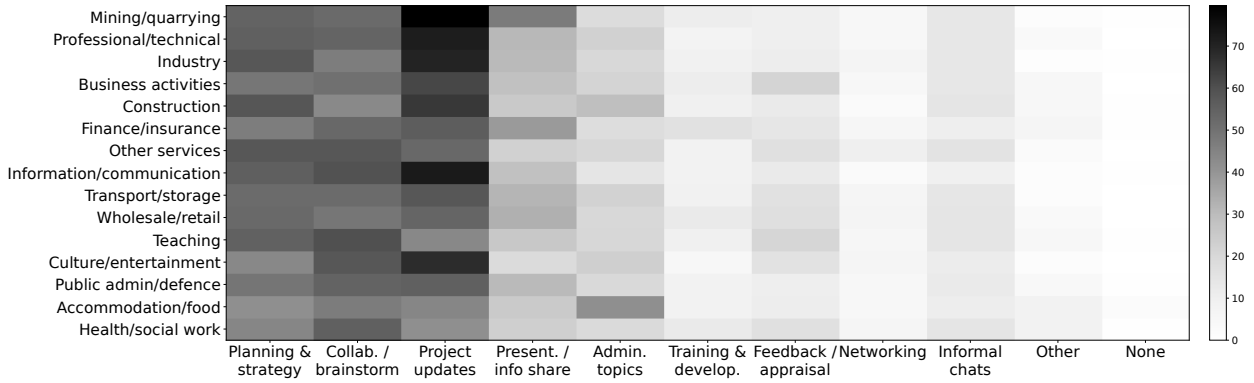
3.3 Meetings primarily facilitate coordination

Meetings can, in principle, serve many functions. They may facilitate coordination across workers and teams, provide a forum for exchanging information and solving problems, support training and mentoring, or simply communicate routine administrative matters. Distinguishing between these functions is important because they imply fundamentally different economic roles for meetings within the firm.

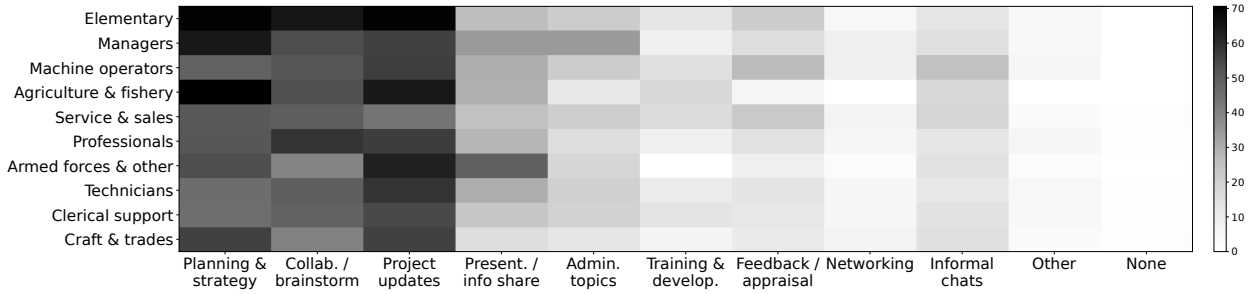
Figure 6 reports workers' stated reasons for participating in meetings. Several clear patterns emerge. The three most commonly reported activities—updates on projects and tasks, collaboration and problem solving, and planning and strategy discussions—are each reported by roughly half of all respondents. Presentations and information sharing are also common. By contrast, networking, informal conversations, administrative matters, feedback conversations, and training or skills development account for a considerably smaller share of meeting activity.

An important commonality across the dominant meeting activities is that they require interaction among multiple workers. Planning, problem solving, strategy discussions, project

Figure 7: Meeting Activities by Sector and Occupation



(a) By sector



(b) By occupation

Notes: Each cell is the share (percent) of respondents in the sector (panel a) or one-digit occupation (panel b) who selected that type of meeting activity, from the survey question "You mentioned 'meeting' as one of the activities. What type of meeting(s) was this?"; respondents could select all activities that apply, so the shares within a row sum to more than 100 percent. Cell shading encodes this share: the colorbar to the right maps each shade to a value in percent, running from white at 0 percent (no respondent in that sector or occupation selected the activity) to the darkest shade at the top of the scale (roughly 70 percent); a darker cell therefore indicates that a larger share of workers in that group reported the activity. Panel (a) groups workers by sector (the 21 NACE sections, sectors with fewer than 100 respondents omitted) and panel (b) by one-digit STYRK-08 occupation. Activity, sector, and occupation labels are defined in the notes to Figure 6 and Appendix Figure 5. The sample is the survey respondents who reported attending a meeting.

updates, and information sharing all involve bringing together dispersed information, coordinating complementary tasks, or jointly determining future actions. By contrast, activities that can more readily be undertaken individually—such as routine administration or formal training—account for a much smaller share of meeting time.

Figure 7 shows that these patterns are very stable across sectors and occupations. Although meeting intensity differs considerably across these groups, the reported purposes of meetings remain strikingly consistent. Thus, meeting intensity varies substantially across organizational settings, while the reported purposes of meetings are comparatively stable.

These descriptive findings provide a useful lens through which to interpret the remainder

of the paper. If meetings are primarily coordination activities, differences in meeting intensity across firms are likely to reflect differences in how firms organize communication and production rather than differences in the fundamental purpose of meetings themselves.

3.4 Meeting quantity varies more than meeting quality

Appendix Figure B.2 compares measures of meeting intensity with workers' assessments of meeting quality and meeting productivity. Meeting quantity varies considerably across workers and organizations. By contrast, average assessments of meeting quality vary relatively little across these groups. Workers employed in meeting-intensive environments do not systematically report that meetings are more or less productive than workers who spend relatively little time in meetings. Instead, the main source of heterogeneity is the frequency of meetings rather than how workers evaluate the quality of the meetings.

3.5 Meetings reflect organizational design

Table 1 reports the share of variation in our principal meeting measures explained separately by worker characteristics, occupations, industries, and firm fixed effects. If meeting intensity is determined primarily by production technologies and job requirements, occupations and industries should account for most of the observed variation. By contrast, substantial explanatory power for firm effects would suggest that otherwise similar workers employed in different firms experience systematically different meeting environments.[3]

We first ask how much of the variation in meeting intensity can be explained by observable worker characteristics. Based on the adjusted R^2, differences in age, gender, education, and other worker characteristics explain between 6 and 10 percent of the variation in our principal measures of meeting intensity. Meeting intensity therefore appears to depend relatively little on who workers are.

What workers do matters considerably more. Based on the adjusted R^2, occupation fixed effects explain approximately 28 percent of the variation in weekly meeting hours, 25 percent of the variation in office meeting time, and 22 percent of the variation in work-from-home-day meeting time, consistent with the large occupational differences documented above. By comparison, industry fixed effects explain only around 5–10 percent of the variation in our principal measures of meeting intensity. Meeting intensity therefore varies substantially across occupations, but much of this variation occurs within rather than across industries.

[3]Sample sizes differ slightly across outcomes because some respondents did not answer every meeting question; Appendix Table A.5 reports the same decomposition on a common sample, with very similar results.

Table 1: Variance Explained by Individual Characteristics and Fixed Effects

	Individual controls		Sector FE		Occupation FE		Firm FE	
	R^2	Adj.	R^2	Adj.	R^2	Adj.	R^2	Adj.
Meeting frequency	9.6	6.2	5.6	5.4	14.1	13.0	27.2	11.0
Meeting hours	13.5	10.2	8.1	7.9	29.1	28.2	34.0	19.3
Meeting time on office days	12.5	9.2	9.9	9.7	25.9	24.9	31.9	16.8
Meeting time on work-from-home days	9.9	6.5	10.4	10.2	23.2	22.2	38.7	25.0
Meeting productivity	6.2	1.8	0.6	0.4	2.5	0.9	20.6	2.2
Teamwork involvement	6.3	2.7	2.7	2.5	9.3	8.1	25.0	8.3
Active collaboration	5.0	1.3	3.3	3.1	8.5	7.2	26.2	9.6
Role clarity	4.5	0.8	1.0	0.8	4.0	2.7	20.5	2.7
Shared responsibility	4.6	0.9	0.8	0.6	3.9	2.7	21.5	3.9
Team support	4.2	0.4	0.6	0.4	2.8	1.5	21.3	3.6
Collaboration index	4.8	1.1	2.0	1.8	6.0	4.7	23.3	6.1
Connectedness	4.8	1.1	0.9	0.7	2.4	1.1	20.0	2.1
Time with same-seniority coworkers	6.9	3.3	1.5	1.3	3.4	2.1	19.1	1.1
Time with higher-seniority coworkers	15.5	12.2	0.6	0.4	3.8	2.5	19.2	1.2
Time with lower-seniority coworkers	5.4	1.8	0.7	0.5	4.1	2.8	18.4	0.2

Notes: For each factor we report the R^2 and the adjusted R^2 (both in percent) from a regression of the measure on that factor alone: the individual controls with no fixed effects, or the indicated fixed effect with no other regressors. Individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, and municipality of residence. Each column is estimated on its own sample, so the number of observations ranges from about 4,900 to 9,100; the firm column is smallest because firm fixed effects require at least two survey respondents per firm. For directly comparable, common-sample R^2 values see Appendix Table A.5.

Strikingly, firm fixed effects also explain a substantial share of the variation in meeting intensity. Based on the adjusted R^2, firms account for approximately 19 percent of the variation in weekly meeting hours, 17 percent of the variation in meeting time on office days, and 25 percent of the variation in meeting time on work-from-home days. Firm effects therefore account for substantial variation in meeting practices, even after adjusting for the large number of firm effects. This suggests that meeting environments reflect not only what workers do, but also the organizations in which they work.

Firm effects are also present for other workplace characteristics, but they are substantially smaller. As shown in Table 1, firms explain considerably more variation in meeting intensity than in measures such as role clarity, shared responsibility, team support, or perceived meeting productivity. This suggests that firms differ more in how they organize work through meetings than in broader aspects of workplace climate.

Just as firms differ in compensation policies, managerial structures, and production processes, they also differ in the extent to which they allocate scarce employee time toward meetings. In this sense, meeting intensity emerges as an important—and perhaps somewhat overlooked—dimension of organizational design. This finding motivates the remainder of

the paper. If firms differ systematically in their reliance on meetings, an immediate question is whether these differences are associated with meaningful differences in firm and worker outcomes.

4 Meetings, Firm Wage Premia, Revenue, and Wage Growth

Meetings are costly because they require groups of workers to devote time away from other productive activities. Consequently, firms that rely more heavily on meetings incur a higher opportunity cost of communication than firms that organize work with fewer meetings. Do firms that spend more time on meetings also receive greater benefits from them?

We begin by examining the relationship between meeting intensity and firm wage premia, and supplement this analysis with evidence on firm revenue and revenue per worker. We then ask whether this relationship is specific to meetings or whether it reflects broader differences in workplace climate and organizational practices. Finally, we examine whether workers employed in more meeting-intensive environments experience faster wage growth and compare the predictive content of meetings with alternative uses of work time.

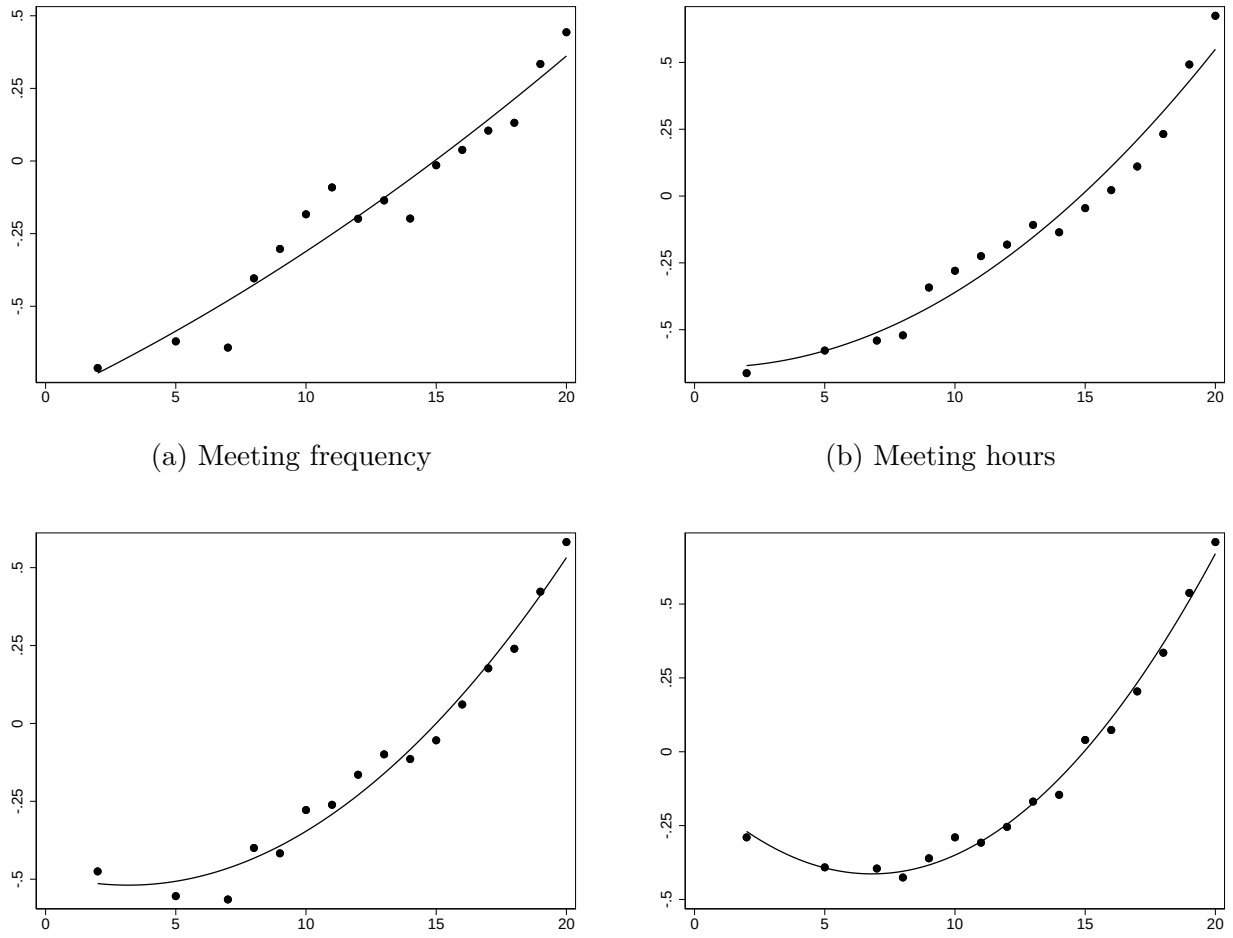
4.1 Meeting intensity rises with firm wage premia and firm revenue

Firm wage premia provide a natural starting point because they summarize persistent differences across firms after accounting for worker heterogeneity.

Figure 8 reports the relationship between firm wage premia and our principal measures of meeting intensity. Firms with higher wage premia hold meetings more frequently, devote more hours per week to meetings, and spend more time in meetings on both office and work-from-home days. The relationship is monotonic across the distribution of firm wage premia and is evident across all of our quantity-based measures of meeting activity.

This relationship is economically informative because it is not a mechanical consequence of wage differences. On the contrary, firms paying higher wages face a higher opportunity cost of every participant-hour devoted to meetings. A firm paying twice the wage incurs roughly twice the labor cost of assembling the same group of employees. The fact that higher-paying firms nevertheless devote more organizational resources to meetings implies either that they realize larger benefits from communication or that they are more tolerant of unproductive meeting time.

Figure 8: Meeting Intensity and Firm Wage Premia



(a) Meeting frequency

(b) Meeting hours

(c) Meeting time on office days

(d) Meeting time on work-from-home days

Notes: This figure reports the relationship between firm wage premia and our principal measures of meeting intensity. Firms are sorted into twenty equal-sized bins (vigintiles) of their estimated AKM wage premium—the firm fixed effect from a two-way worker–firm wage regression (2019–2023); the horizontal axis is the bin's mean wage premium and the vertical axis is the bin mean of the meeting measure, standardized across workers (z-score). The measures are meeting frequency ("How often do you take part in meetings that involve coordination or team collaboration?"), weekly meeting hours ("On average, how much of your work week is spent in meetings?"), and meeting time on a selected in-office day and a selected work-from-home day (each from "On the selected office or work-from-home day, approximately how much time did you spend on meetings (digital or in-person)?"). Each point is a firm-level bin mean; the curve is a quadratic fit. The sample is the 3,818 survey-linked firms with an estimated wage premium.

We next report the same relationships using revenue (Appendix Figure B.6) and revenue per worker (Appendix Figure B.8). The patterns closely mirror those obtained using firm wage premia. Firms with higher revenue and revenue per worker hold meetings more frequently, devote more hours per week to meetings, and spend more time in meetings on both office and work-from-home days. The fact that similar patterns emerge for these distinct

firm-level measures suggests that meeting intensity is associated not only with firms' wage premia, but also with their economic performance

4.2 Team climate and subjective usefulness of meetings do not rise with firm wage premia

If firms with higher wage premia or higher revenues also report systematically better workplace culture, greater role clarity, stronger team support, and higher perceived meeting productivity, then the gradient documented in Figure 8 could simply reflect broader differences in organizational quality rather than differences in how firms organize communication.

To examine this question in greater detail, Figures 8 and 9 compare the relationship between firm wage premia and a broad set of workplace characteristics. In addition to our measures of meeting frequency and meeting duration, we examine perceived meeting productivity, role clarity, shared responsibility, team support, and other measures of workplace climate.

Measures of meeting intensity exhibit strong positive gradients with firm wage premia. By contrast, broader measures of workplace climate are largely flat or display only modest relationships with firm wage premia. Similarly, workers in high-premium firms do not report substantially higher meeting productivity than workers employed in lower-premium firms. Similar results are confirmed in Appendix Figures B.6 and B.7 for revenue, and Appendix Figures B.8 and B.9 for revenue per worker.

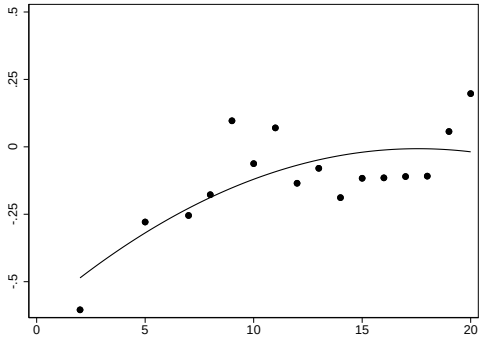
These findings suggest that the relationship documented in Section 4.1 is specific to meetings rather than reflecting a more general tendency for high-performing firms to score highly on all subjective workplace measures. Firms paying higher wages and having higher revenues appear to differ primarily in the extent to which they rely on meetings, not in workers' perceptions of workplace climate or the quality of individual meetings.

4.3 Meeting practices predict wage growth

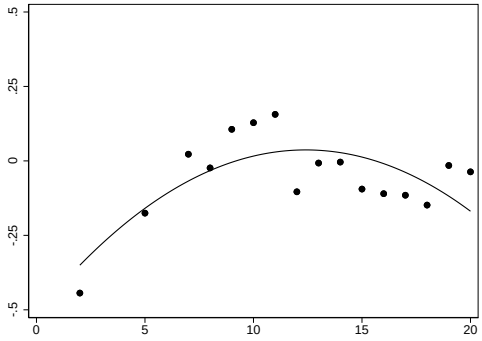
Table 2 reports the relationship between workplace meeting measures and growth in workers' positions within the national wage distribution. Measures capturing the intensity of workplace interaction—including meeting hours, meeting time on office days, meeting frequency, and active collaboration—are all positively associated with wage growth. Among these, meeting hours are the strongest predictor.

By contrast, broader measures of workplace climate display substantially weaker relationships with wage growth. Role clarity, shared responsibility, team support, connectedness, and the collaboration index are all only weakly related to wage progression, and several

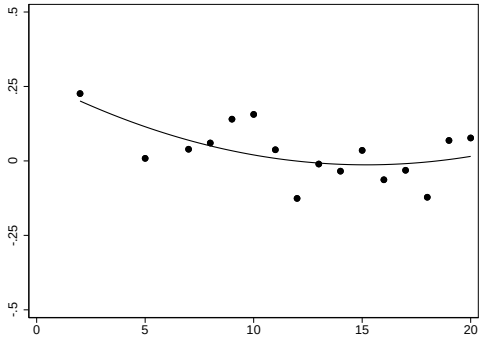
Figure 9: Team Climate Measures and Firm Wage Premia



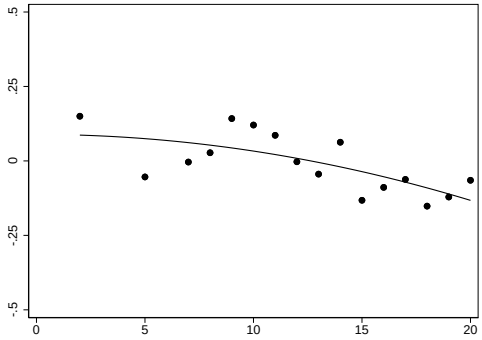
(a) Teamwork involvement



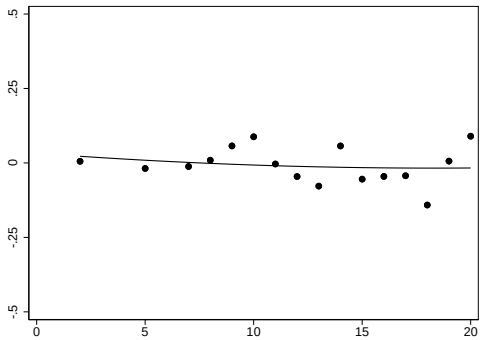
(b) Active collaboration



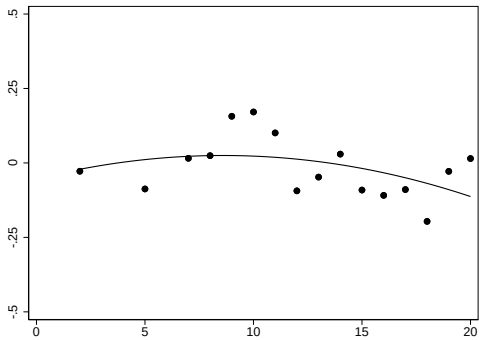
(c) Role clarity



(d) Shared responsibility



(e) Team support



(f) Collaboration index

Notes: This figure reports the relationship between firm wage premia and measures of teamwork and workplace climate. Firms are sorted into twenty equal-sized bins (vigintiles) of their estimated AKM wage premium—the firm fixed effect from a two-way worker–firm wage regression (2019–2023); the horizontal axis is the bin's mean wage premium and the vertical axis is the bin mean of the measure, standardized across workers (z-score). The measures are teamwork involvement ("How often are you involved in teamwork or collaboration?"), active collaboration ("How often do you actively collaborate with colleagues in your day-to-day work?"), role clarity ("How clear do you feel your own role is in the team?"), shared responsibility ("Do team members usually share responsibility equally?"), team support ("How often do team members support each other in demanding tasks?"), and a collaboration index (the average of the last four). Each point is a firm-level bin mean; the curve is a quadratic fit. The sample is the firms with an estimated wage premium: 3,818 for teamwork involvement and 3,690 for the other measures.

Table 2: Meeting and Collaboration Measures and Wage Rank Growth

	(1) Coefficient	(2) Observations
Meeting frequency	0.262**	6,154
	(0.131)	
Meeting hours	0.467***	6,154
	(0.131)	
Meeting time on office days	0.345***	6,154
	(0.124)	
Meeting time on work-from-home days	0.246**	6,154
	(0.117)	
Active collaboration	0.241**	6,032
	(0.119)	
Role clarity	0.201*	6,032
	(0.115)	
Shared responsibility	-0.036	6,032
	(0.117)	
Team support	-0.066	6,032
	(0.114)	
Collaboration index	0.113	6,032
	(0.118)	
Connectedness	0.199*	6,154
	(0.102)	

Note: Each row reports a separate regression of wage rank growth on the standardized workplace measure shown, under the main specification: individual controls and sector, occupation, and firm fixed effects. Wage rank growth is the change in a worker's percentile rank in the national annual-earnings distribution from the prior year to the current year (2022 to 2023). Individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, municipality of residence, and baseline wage. Standard errors are clustered by firm in parentheses; the reported number of observations is each measure's estimation sample. Appendix Table A.6 adds the fixed effects gradually and shows that the estimates are robust across specifications. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

estimates are statistically indistinguishable from zero. Thus, workers in environments characterized by more intensive communication experience faster wage growth, whereas workers reporting a generally more positive workplace environment do not.

These findings mirror the evidence for firm wage premia. Meeting frequency and intensity are associated with higher firm wage premia and faster worker wage growth. Overall, the evidence suggests that the economically relevant dimension of workplace organization is not simply whether employees report supportive or well-functioning workplaces, but the extent to which organizations create opportunities for workers to exchange information, coordinate tasks, and interact with one another.

Figure 10 explores heterogeneity in the relationship between meeting intensity and wage

growth across worker groups. The positive association is broadly similar across groups, although it is somewhat stronger for workers with below-median baseline wages.

We next examine two additional pieces of evidence that help characterize the relationship between meetings and wage growth. Table 3 explores whether the relationship depends on the hierarchical organization of the meeting. While meetings involving more senior colleagues are strongly associated with wage growth in some specifications, these differences are sensitive to the inclusion of detailed career-stage controls.

Table 3: Coworker Interaction and Wage Rank Growth

	(1) Separately	(2) Jointly
Time with same-seniority coworkers	0.097	-0.011
	(0.122)	(0.125)
Time with higher-seniority coworkers	0.268**	0.262**
	(0.117)	(0.119)
Time with lower-seniority coworkers	0.105	0.074
	(0.113)	(0.113)

Note: Each row reports how the time a worker spends with coworkers at a given seniority level relates to subsequent wage rank growth. The three measures are the standardized time spent working with coworkers at the same, a higher, and a lower seniority level, each from the survey question "On a typical workday, how much time do you spend working with people at the same (or a higher, or a lower) seniority level?" (on a 1–10 scale). Column (1) reports each measure in a separate regression; column (2) enters all three jointly. All specifications include individual controls (age group excluded) and sector, occupation, and firm fixed effects. There are 6,083 observations. Standard errors clustered by firm in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

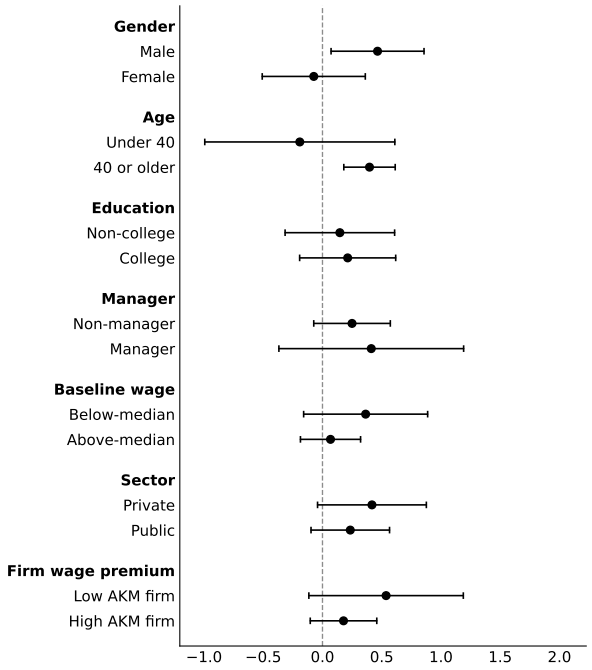
Table 4 then relates meeting intensity to workers' reports of on-the-job learning. Workers employed in more meeting-intensive environments report substantially greater learning on the job, consistent with meetings facilitating the transfer of knowledge and experience within firms. Meetings are not only a coordination technology, they are also an important channel through which firms facilitate learning and develop human capital.

4.4 Meetings are the strongest predictor of wage growth

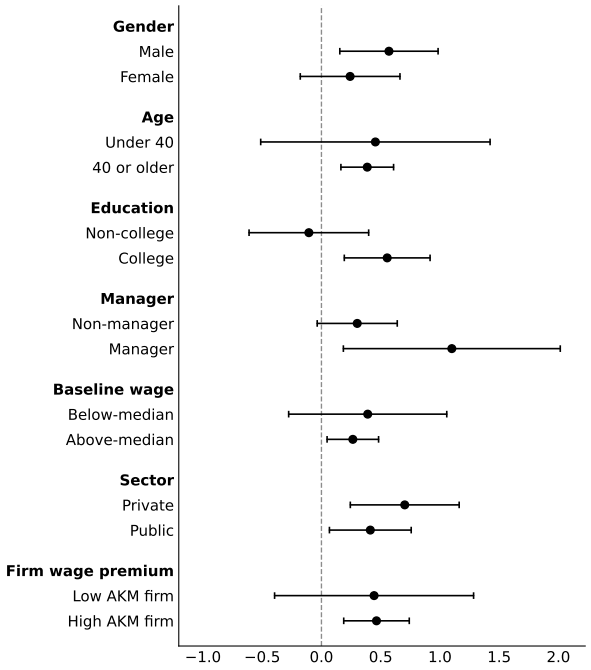
The previous subsection showed that workers spending more time in meetings experience faster wage growth. We next ask whether this relationship is specific to meetings.

Figure 11 compares the incremental explanatory power of alternative workplace activities for growth in workers' positions within the national wage distribution. For each activity, we estimate a common baseline specification and measure the increase in explanatory power associated with adding that activity to the model.

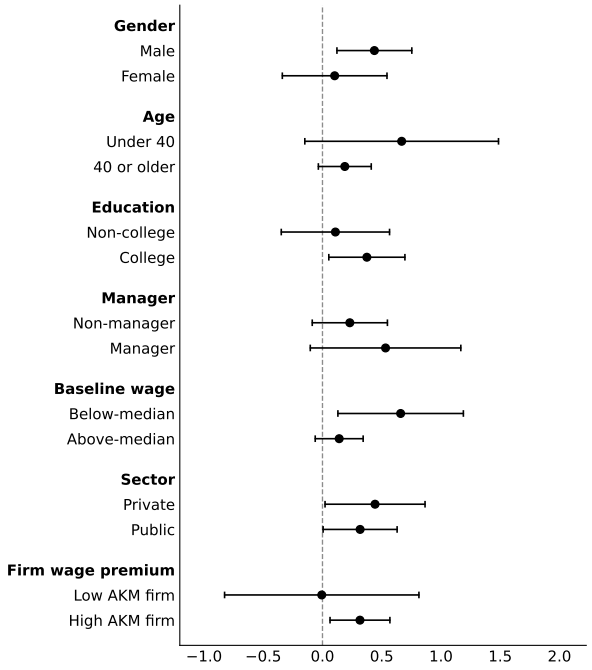
Figure 10: Heterogeneity in Meeting Measures and Wage Rank Growth



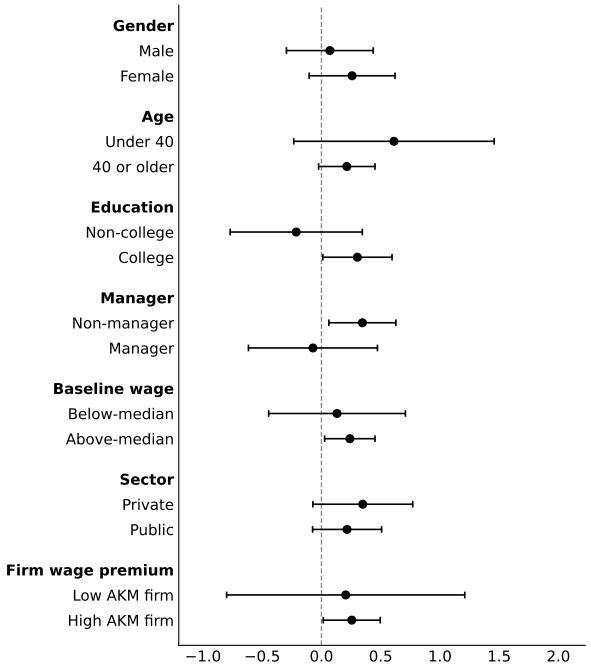
(a) Meeting frequency



(b) Meeting hours



(c) Meeting time on office days



(d) Meeting time on work-from-home days

Notes: This figure examines heterogeneity in the relationship between meeting intensity and wage rank growth across worker and firm groups. Each point is the coefficient of the standardized meeting measure on wage rank growth, estimated in a separate regression within the subgroup, with its 95 percent confidence interval. The subgroups are defined by gender, age, college education, managerial status, baseline wage, sector, and the firm's wage premium, where low- and high-AKM firms are those in the bottom two and top two quartiles of the firm wage premium. All regressions include individual controls and sector, occupation, and firm fixed effects. Standard errors are clustered by firm.

Table 4: Meeting Exposure and Self-reported Skill Development

	(1) Better at job	(2) Learned new skills	(3) Developed existing skills
Meeting frequency	0.122***	0.138***	0.131***
	(0.016)	(0.016)	(0.016)
Meeting hours	0.077***	0.094***	0.078***
	(0.017)	(0.016)	(0.017)
Meeting time on office days	0.068***	0.064***	0.072***
	(0.017)	(0.017)	(0.017)
Meeting time on work-from-home days	0.047***	0.065***	0.052***
	(0.016)	(0.016)	(0.015)

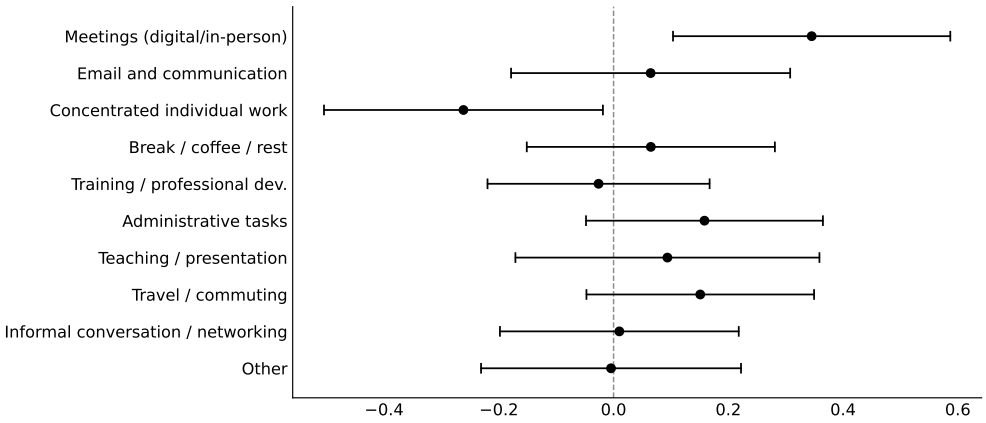
Note: Each cell is a separate regression of a standardized self-reported skill-development outcome (column) on a standardized meeting measure (row), under the main specification: individual controls and sector, occupation, and firm fixed effects. The outcomes are workers' agreement, on a 1–10 scale, with "I am better at doing my job now than I was a year ago" (column 1), "Over the past year, I have learned new skills that make me better at my job" (column 2), and "Over the past year, I have further developed existing skills that make me better at my job" (column 3). Individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, municipality of residence, and baseline wage. There are 6,084 observations. Standard errors are clustered by firm in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Meetings are the single strongest predictor of wage growth. Time spent in meetings contributes substantially more explanatory power than concentrated individual work, administrative tasks, training, travel, email, or other observed workplace activities. Concentrated individual work has strong predictive power for wage growth but is not positively correlated with it, while most remaining activities contribute relatively little additional explanatory power and are not consistently related to wage growth.

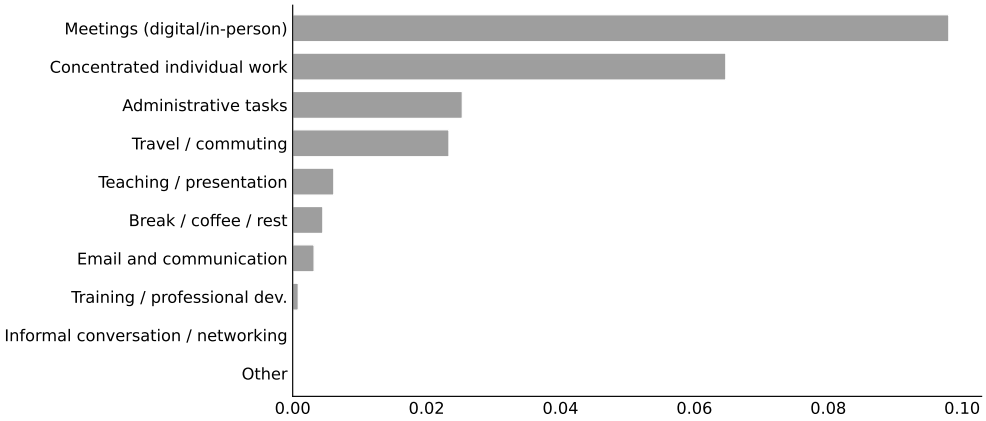
We also estimate a specification in which all workday activities are entered jointly in a single regression. Meeting time remains the only positive and statistically significant predictor of wage-rank growth (Appendix Figure B.10).

These findings strengthen the interpretation of the previous subsection. The relationship between meeting intensity and wage growth does not simply reflect differences in how much workers work or how they allocate their time across productive activities. Rather, among the observed uses of workers' time, meetings contain the greatest information about wage progression.

Figure 11: Predictive Power of Workday Activities for Wage Rank Growth



(a) Coefficient of wage rank growth on activity time



(b) Added predictive power for wage rank growth (R^2)

Notes: This figure compares how time spent on different workday activities predicts wage rank growth. Panel (a) reports, for each activity, the coefficient from a separate regression of wage rank growth on the standardized time a worker spent on that activity during their most recent in-office day, with its 95 percent confidence interval; panel (b) reports the incremental R^2—the gain in explanatory power (in percentage points) from adding that activity to the baseline specification. All regressions include individual controls and sector, occupation, and firm fixed effects; individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, municipality of residence, and baseline wage. Standard errors are clustered by firm.

5 Conclusion

Meetings are among the most common features of modern organizations, yet economists have devoted remarkably little attention to understanding why firms rely on them or how they are related to organizational performance. This paper provides the first large-scale economic evidence on workplace meetings by combining a detailed worker survey with linked employer–employee administrative data from Norway. We document that meetings consume

substantial organizational resources, are used primarily for coordination activities such as planning, problem solving, and information sharing, and vary systematically across firms even after accounting for differences in workers, occupations, and industries.

We further show that these differences are economically meaningful. Firms paying higher wage premia and having higher revenues devote substantially more resources to meetings despite facing a higher opportunity cost of employee time, while workers employed in more meeting-intensive environments experience faster wage growth. These relationships are specific to meeting frequency and intensity rather than broader measures of workplace climate. Evidence on on-the-job learning further suggests that meetings may facilitate the transmission of knowledge within firms. Separately, interactions with senior colleagues are associated with stronger wage growth.

Our analysis is descriptive and does not identify the causal effects of meetings. An important direction for future research is therefore to understand when meetings improve organizational performance and when they instead reflect unnecessary coordination costs. More broadly, our findings suggest that meetings constitute an important and previously overlooked dimension of organizational design. As production becomes increasingly specialized and collaborative, understanding how firms organize communication may prove as important as understanding how they organize incentives, hierarchies, or compensation.

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Appendices

A Tables

Table A.1: Summary Statistics

Variable	N	Mean	SD	Median
Female	9,099	0.485	0.500	0.000
Age	9,099	47.1	12.2	48.0
College degree	9,099	0.609	0.488	1.000
Immigrant status	9,099	0.087	0.282	0.000
Married or cohabiting	9,099	0.737	0.440	1.000
Union member	9,099	0.692	0.462	1.000
Manager	9,049	0.268	0.443	0.000
Public sector	9,095	0.501	0.500	1.000
Annual earnings (1000 NOK)	9,088	666.1	343.6	631
Wage rank growth	9,010	0.71	8.26	0.00
Log wage growth	9,010	0.104	0.317	0.058
Firm size	4,015	366.2	1124.1	69.0
Firm wage premium, 2019-2023	3,818	-0.057	0.196	-0.057

Notes: Summary statistics for the survey-respondent regression sample. Female, college degree, immigrant, married or cohabiting, union member, manager, and public sector are binary indicators; Age is in years and annual earnings is total labor income in the prior year (thousands of NOK). Wage rank growth is the change in a worker's percentile rank in the national annual-earnings distribution from the prior to the current year; log wage growth is the corresponding change in log earnings. Firm size is the number of employees at the worker's enterprise. Firm wage premium is the estimated AKM firm fixed effect from a two-way worker–firm wage regression (2019–2023). Worker rows are person-weighted; the firm-size and firm-wage-premium rows are firm-weighted over one observation per firm, so their N is a firm count.

Table A.2: Representativeness: administrative population vs. survey respondents

	Admin population			Survey respondents		
	N	Mean	Median	N	Mean	Median
Panel A: Worker characteristics						
Age	2,824,095	42.8	42.0	9,099	47.1	48.0
Female	2,824,095	0.469	0	9,099	0.485	0
College degree	2,748,496	0.466	0	9,099	0.609	1
Immigrant	2,748,496	0.183	0	9,099	0.087	0
Married or cohabiting	2,834,447	0.682	1	9,099	0.737	1
Union member	2,834,447	0.500	0	9,099	0.692	1
Public sector	2,805,600	0.360	0	9,095	0.501	1
Panel B: Wages and outcomes						
Annual earnings, prior year (1000 NOK)	2,800,189	552.5	538.0	9,088	666.1	631.0
Log annual earnings, prior year	2,650,220	12.96	13.23	9,015	13.27	13.36
Wage rank growth	2,634,137	1.09	0.00	9,010	0.71	0.00
Log wage growth	2,634,137	0.143	0.064	9,010	0.104	0.058
Panel C: Firm characteristics						
Firm size	51,816	46.4	11.0	4,014	366.5	69.0
Firm wage premium, 2019-2023	50,524	-0.128	-0.125	3,818	-0.057	-0.057
Revenue per worker (1000 NOK)	42,118	3,040.6	1,877.0	2,456	4,222.6	2,398.4
Labor share of revenue	42,022	0.402	0.357	2,447	0.393	0.338
Capital intensity	42,029	3.41	1.41	2,443	4.89	1.87

Notes: Comparison of the administrative population with the survey-respondent sample; for each group we report the number of observations, mean, and median. Panel A reports worker characteristics and Panel B wages and earnings outcomes, both person-weighted. Panel C reports firm characteristics, firm-weighted over one observation per firm, so N is a firm count: the survey column is the firms in the regression sample and the administrative column is the corresponding firm population, restricted to firms with at least five employees. We exclude smaller administrative firms for two reasons: our focus is meetings, which are not meaningful in firms too small to actually hold them; and "mom-and-pop" firms are not well captured in the survey data. The labor share of revenue is computed for all firms with positive operating revenue, coding firms with no wage bill as zero. The labor share, capital intensity, and revenue per worker are winsorized in both samples at the 99th percentile of the administrative distribution, since their means are otherwise driven by a small number of firms with near-zero revenue or wage bill.

Table A.3: Summary Statistics: survey variables

Variable	N	Mean	SD	Median
Panel A: Meetings				
Meeting frequency	9,099	2.82	1.12	3.0
Meeting hours	9,099	4.72	4.99	2.0
Meeting time on office days	9,099	1.60	1.73	1.0
Meeting time on work-from-home days	9,099	0.94	1.58	0.0
Meeting productivity	7,083	6.32	1.93	7.0
Panel B: Collaboration and teamwork				
Teamwork involvement	9,099	3.71	1.02	4.0
Active collaboration	8,845	8.17	2.06	9.0
Role clarity	8,845	8.11	1.84	8.0
Shared responsibility	8,845	6.15	2.20	6.0
Team support	8,845	8.06	1.79	8.0
Connectedness	9,099	3.98	1.63	4.0
Time with same-seniority coworkers	9,099	6.53	2.49	7.0
Time with higher-seniority coworkers	9,099	5.74	2.85	6.0
Time with lower-seniority coworkers	9,099	6.27	2.69	7.0
Panel C: Subjective outcomes				
Better at my job now than 1 year ago	9,099	7.33	2.51	8.0
Learned new skills	9,099	7.03	2.47	7.0
Developed existing skills	9,099	7.24	2.37	7.0
Panel D: Meeting activities				
Planning and strategy discussions	5,486	0.517		
Collaboration, brainstorming, problem-solving	5,486	0.542		
Updates about projects or tasks	5,486	0.565		
Presentations or information sharing	5,486	0.288		
Administrative topics	5,486	0.201		
Training or skills development	5,486	0.100		
Feedback or appraisal conversations	5,486	0.146		
Networking	5,486	0.057		
Informal conversations	5,486	0.133		
Other meeting activities	5,486	0.047		
None of these meeting activities	5,486	0.004		

Notes: Summary statistics for the survey-respondent regression sample. Meeting frequency is on a 1–5 scale and meeting productivity on a 1–10 scale. Meeting hours per week is coded at the midpoint of the reported hour band, and meeting time on office and work-from-home days is measured in hours. In Panels B and C, items are on 1–10 Likert scales except teamwork involvement (1–5) and coworker connectedness (1–7). Panel D reports the share of respondents selecting each meeting activity, with multiple selections allowed. Sample sizes vary across items because some questions were not shown to all respondents. Survey questionnaire is in Appendix C.

Table A.4: Robustness of Wage Rank Growth Estimates to Reweighting

	(1) Baseline	(2) Reweighted
Meeting frequency	0.262**	0.282
	(0.131)	(0.178)
Meeting hours	0.467***	0.551***
	(0.131)	(0.194)
Meeting time on office days	0.345***	0.401***
	(0.124)	(0.155)
Meeting time on work-from-home days	0.246**	0.204
	(0.117)	(0.162)
Active collaboration	0.241**	0.316**
	(0.119)	(0.154)
Role clarity	0.201*	0.162
	(0.115)	(0.140)
Shared responsibility	-0.036	-0.086
	(0.117)	(0.153)
Team support	-0.066	-0.049
	(0.114)	(0.141)
Collaboration index	0.113	0.110
	(0.118)	(0.146)
Connectedness	0.199*	0.193
	(0.102)	(0.141)

Notes: Each cell is a separate regression of wage rank growth on the standardized measure in the row, under the main specification (individual controls and sector, occupation, and firm fixed effects). Column (1) reproduces the baseline, unweighted estimate. Column (2) reweights the survey respondents to the administrative population using inverse-propensity weights: a logit of a survey-membership indicator, estimated on the pooled survey and administrative samples, is fit on gender, age group, college education, immigrant status, marital/cohabitation status, union membership, and baseline-wage quartile, and each survey worker is weighted by the population-to-survey odds $(1-p)/p$, normalized to mean one. Standard errors clustered by firm in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A.5: Variance Explained by Individual Characteristics and Fixed Effects (common sample)

	Individual controls		Sector FE		Occupation FE		Firm FE	
	R^2	Adj.	R^2	Adj.	R^2	Adj.	R^2	Adj.
Meeting frequency	9.6	5.0	5.9	5.6	13.9	12.4	27.3	11.1
Meeting hours	14.1	9.8	9.2	8.9	31.9	30.7	34.0	19.3
Meeting time on office days	12.5	8.0	10.5	10.2	27.8	26.5	31.9	16.7
Meeting time on work-from-home days	11.0	6.5	12.8	12.5	27.2	25.9	38.7	25.1
Meeting productivity	8.3	2.8	0.6	0.2	2.7	0.8	20.6	2.3
Teamwork involvement	6.6	1.8	1.9	1.7	9.1	7.5	25.0	8.4
Active collaboration	6.5	1.7	3.0	2.7	9.7	8.1	26.2	9.7
Role clarity	5.5	0.6	1.2	0.9	4.6	2.9	20.6	2.8
Shared responsibility	5.7	0.8	0.9	0.6	5.1	3.4	21.5	3.9
Team support	5.1	0.1	0.6	0.3	3.4	1.7	21.2	3.6
Collaboration index	6.0	1.1	1.9	1.6	7.4	5.7	23.3	6.1
Connectedness	6.2	1.4	0.8	0.5	2.5	0.8	20.0	2.1
Time with same-seniority coworkers	7.9	3.2	0.7	0.4	3.0	1.3	19.1	1.0
Time with higher-seniority coworkers	16.9	12.7	0.7	0.4	3.4	1.7	19.2	1.2
Time with lower-seniority coworkers	6.4	1.6	0.9	0.6	4.3	2.6	18.4	0.2

Notes: For each factor we report the R^2 and the adjusted R^2 (both in percent) from a regression of the measure on that factor alone: the individual controls with no fixed effects, or the indicated fixed effect with no other regressors. Individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, and municipality of residence. Sector is the 21 NACE sections, occupation is the three-digit STYRK-08 code, and firm is the main employing enterprise. All columns are estimated on the same sample of workers (the firm-connected sample with non-missing controls), so the R^2 values are directly comparable across factors; the number of observations ranges from 4,842 to 6,204 across measures.

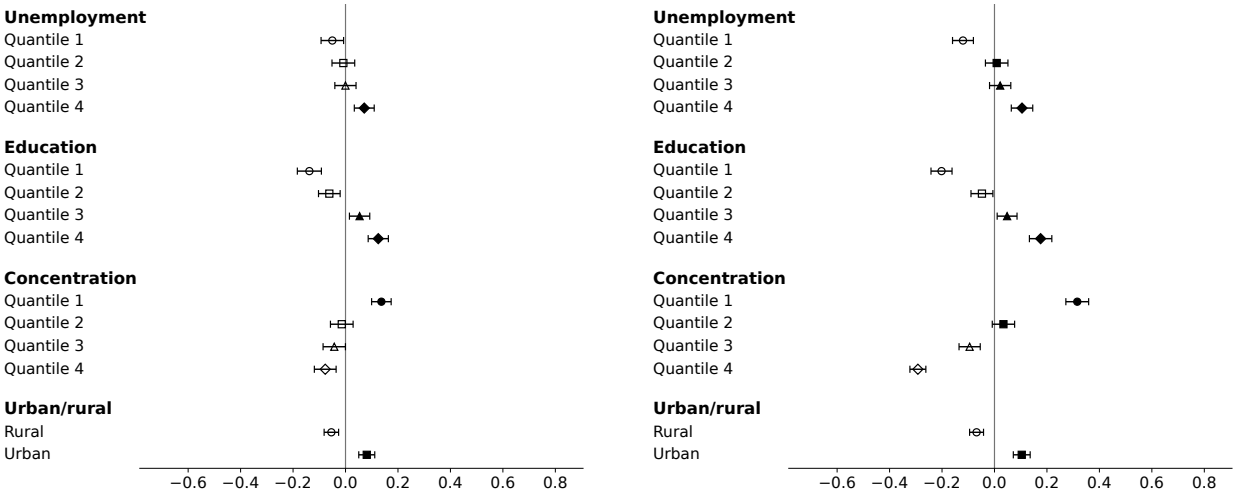
Table A.6: Meeting and Collaboration Measures and Wage Rank Growth

	(1)	(2)	(3)	(4)	(5)
Meeting frequency	0.771***	0.669***	0.511***	0.383***	0.262**
	(0.100)	(0.093)	(0.093)	(0.125)	(0.131)
N	9,009	9,005	8,971	6,164	6,154
Meeting hours	0.842***	0.731***	0.533***	0.615***	0.467***
	(0.101)	(0.088)	(0.096)	(0.125)	(0.131)
N	9,009	9,005	8,971	6,164	6,154
Meeting time on office days	0.781***	0.662***	0.456***	0.493***	0.345***
	(0.093)	(0.089)	(0.094)	(0.124)	(0.124)
N	9,009	9,005	8,971	6,164	6,154
Meeting time on work-from-home days	0.637***	0.509***	0.334***	0.346***	0.246**
	(0.083)	(0.082)	(0.089)	(0.109)	(0.117)
N	9,009	9,005	8,971	6,164	6,154
Active collaboration	0.201**	0.283***	0.366***	0.259**	0.241**
	(0.088)	(0.088)	(0.088)	(0.116)	(0.119)
N	8,759	8,755	8,724	6,042	6,032
Role clarity	0.021	0.062	0.087	0.224**	0.201*
	(0.086)	(0.085)	(0.087)	(0.112)	(0.115)
N	8,759	8,755	8,724	6,042	6,032
Shared responsibility	-0.115	-0.107	-0.039	-0.053	-0.036
	(0.087)	(0.087)	(0.087)	(0.114)	(0.117)
N	8,759	8,755	8,724	6,042	6,032
Team support	-0.046	-0.026	-0.033	-0.040	-0.066
	(0.086)	(0.086)	(0.083)	(0.119)	(0.114)
N	8,759	8,755	8,724	6,042	6,032
Collaboration index	0.020	0.071	0.130	0.131	0.113
	(0.089)	(0.089)	(0.089)	(0.118)	(0.118)
N	8,759	8,755	8,724	6,042	6,032
Connectedness	0.175**	0.206**	0.229***	0.217**	0.199*
	(0.082)	(0.081)	(0.081)	(0.097)	(0.102)
N	9,009	9,005	8,971	6,164	6,154
Individual Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	No	Yes	Yes	No	Yes
Occupation FE	No	No	Yes	No	Yes
Firm FE	No	No	No	Yes	Yes

Note: Each row reports a separate regression of wage rank growth on the standardized workplace measure shown, adding fixed effects gradually across the columns; coefficients are in percentile points of wage rank growth. Wage rank growth is the change in a worker's percentile rank in the national annual-earnings distribution from the prior year to the current year (2022 to 2023). Individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, municipality of residence, and baseline wage, and are included in every column. Column (1) has no fixed effects; column (2) adds sector; column (3) sector and occupation; column (4) firm only; and column (5) sector, occupation, and firm fixed effects simultaneously and is the main specification reported in Table 2. Standard errors are clustered by firm in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

B Figures

Figure B.1: Meeting Intensity by Local Labor Market Characteristics

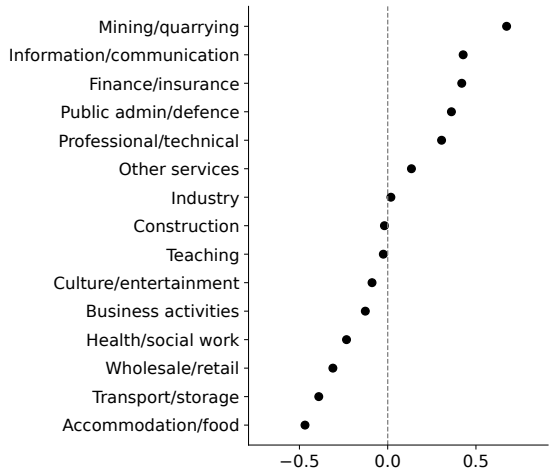


(a) Meeting frequency

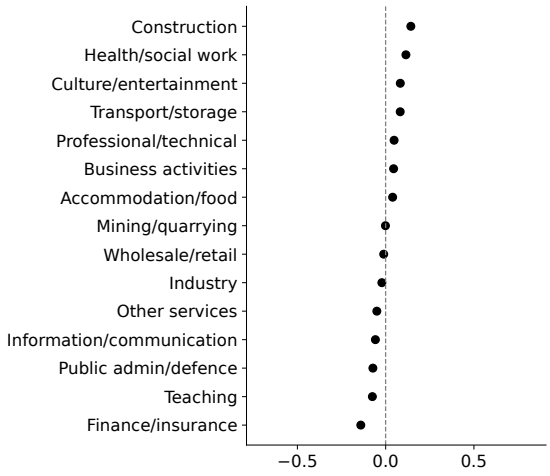
(b) Meeting hours

Notes: Each panel plots subgroup means of a standardized meeting measure across local labor market characteristics, with 95 percent confidence intervals. Panel (a) is meeting frequency, from the survey question "How often do you take part in meetings that involve coordination or team collaboration?", and panel (b) is weekly meeting hours, from "On average, how much of your work week is spent in meetings?". Each measure is standardized to mean zero and unit standard deviation across workers, so zero denotes the average worker. The local labor market characteristics are local unemployment, local education, labor-market concentration, and urban versus rural residence. Local unemployment, local education, and labor-market concentration are grouped into quartiles (1 to 4): local unemployment from tightest to slackest, local education from least to most educated, and labor-market concentration from least to most concentrated. Urban denotes workers in one of Norway's major cities and rural all other, smaller municipalities. Markers are hollow when the subgroup mean lies below the average worker and filled when above; marker shape denotes the ordered category within a variable. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

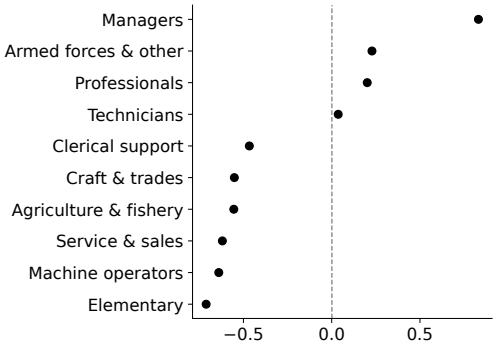
Figure B.2: Meeting Quantity and Perceived Productivity



(a) Meeting hours, by sector



(b) Meeting productivity, by sector



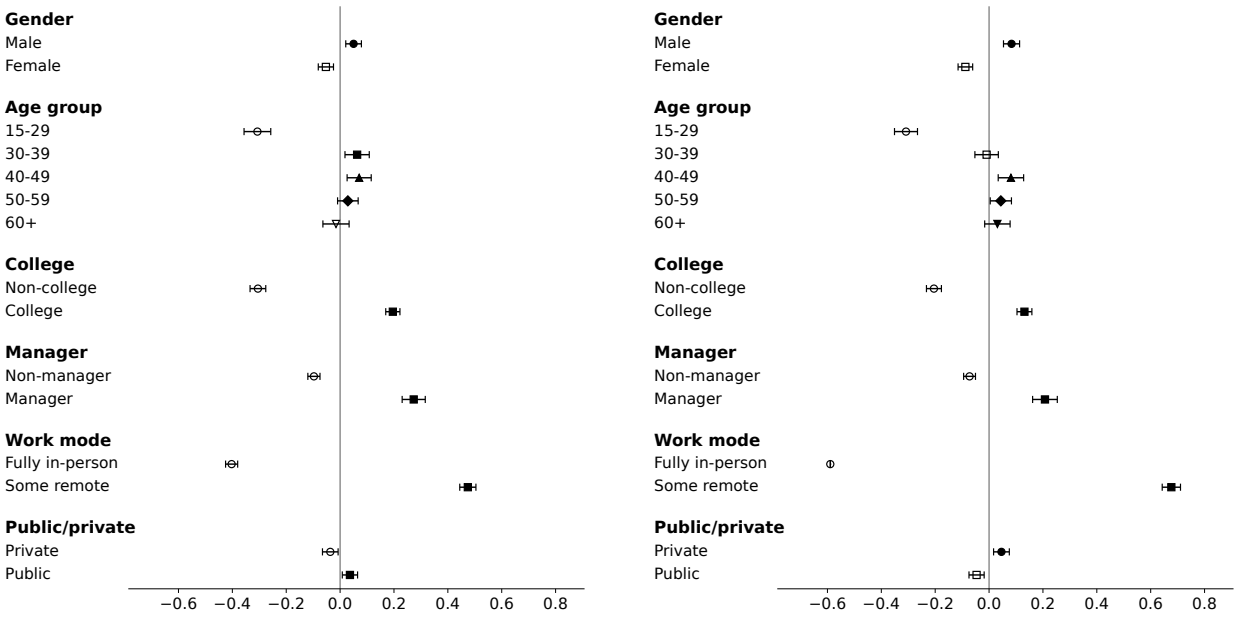
(c) Meeting hours, by occupation



(d) Meeting productivity, by occupation

Notes: Each point is the group mean of a standardized meeting measure, and the dashed line marks the overall mean (zero). Panels (a) and (b) group workers by sector (the 21 NACE sections, sectors with fewer than 100 respondents omitted) and panels (c) and (d) by one-digit STYRK-08 occupation. Panels (a) and (c) are weekly meeting hours, from the survey question "On average, how much of your work week is spent in meetings?", and panels (b) and (d) are perceived meeting productivity, from "How productive do you feel the team meetings are?" (a self-rating from 1 to 10). Each measure is standardized to mean zero and unit standard deviation across workers, so the two measures share a common horizontal axis in standard-deviation units. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

Figure B.3: Meeting Time on Office and Work-from-Home Days by Worker Characteristics

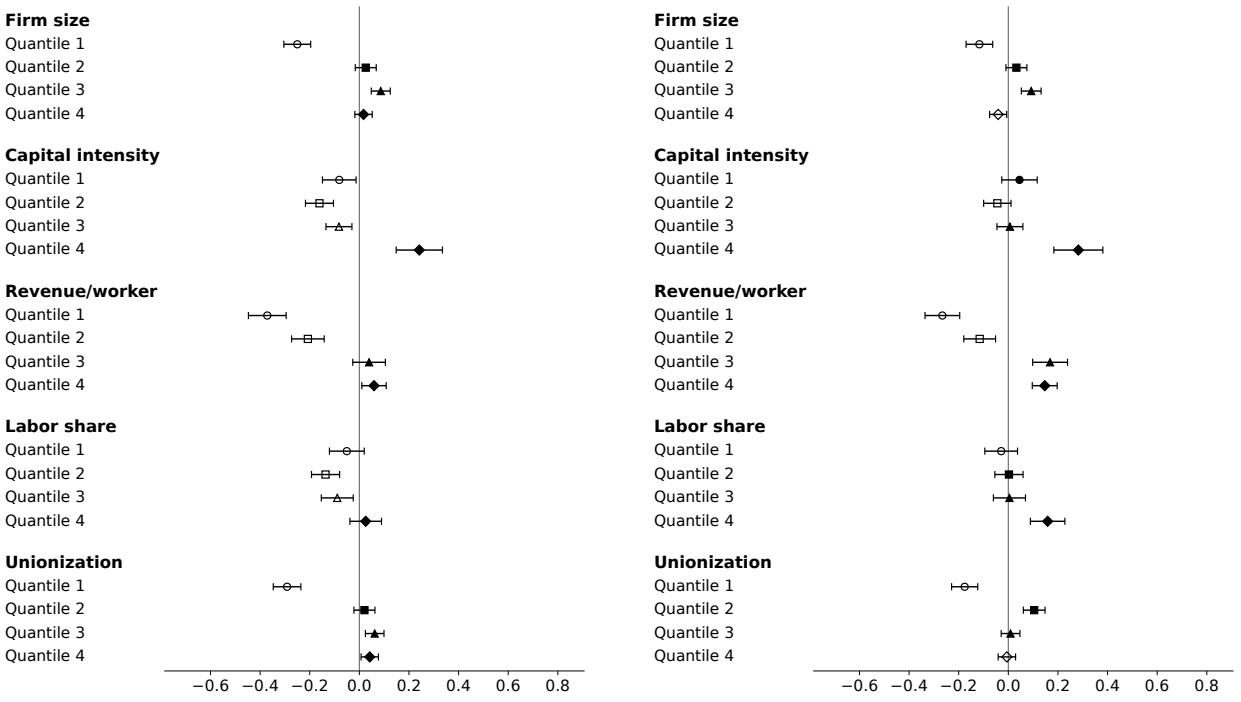


(a) Office days

(b) Work-from-home days

Notes: Each panel plots subgroup means of a standardized meeting measure across worker characteristics, with 95 percent confidence intervals. Panel (a) is meeting time on a selected in-office day, from the survey question "On the selected office workday, approximately how much time did you spend on meetings (digital or in-person)?", and panel (b) is meeting time on a selected work-from-home day, from "On the selected work-from-home day, approximately how much time did you spend on meetings (digital or in-person)?". Each measure is standardized to mean zero and unit standard deviation across workers, so zero denotes the average worker. The worker characteristics are gender, age group, college education, managerial status, work mode, and public- versus private-sector employment. Work mode is "fully in-person" for workers who work only on site and "some remote" for any remote or hybrid arrangement. Markers are hollow when the subgroup mean lies below the average worker and filled when above; marker shape denotes the ordered category within a variable. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

Figure B.4: Meeting Time on Office and Work-from-Home Days by Firm Characteristics

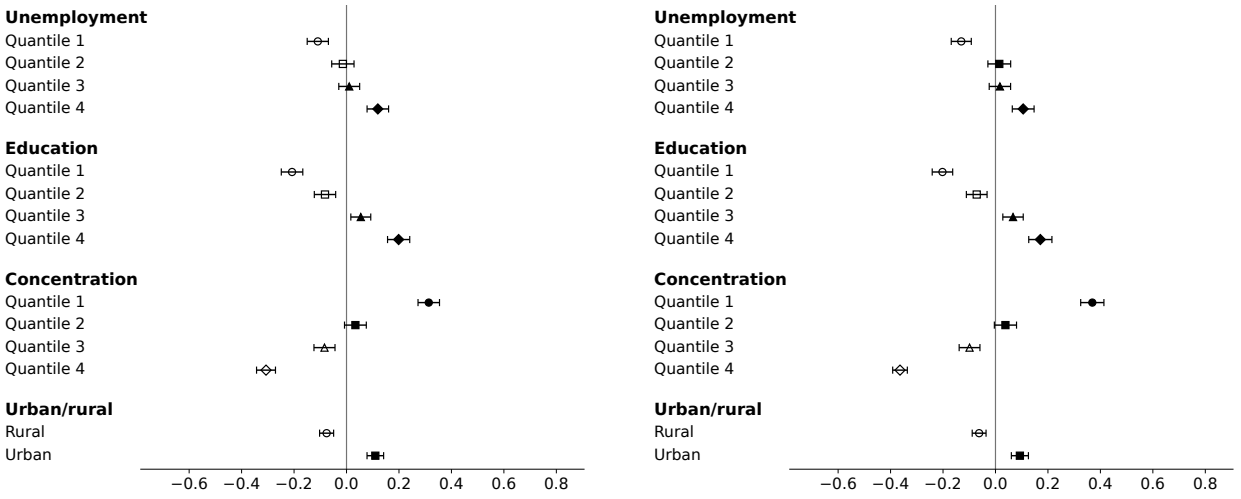


(a) Office days

(b) Work-from-home days

Notes: Each panel plots subgroup means of a standardized meeting measure across firm characteristics, with 95 percent confidence intervals. Panel (a) is meeting time on a selected in-office day, from the survey question "On the selected office workday, approximately how much time did you spend on meetings (digital or in-person)?", and panel (b) is meeting time on a selected work-from-home day, from "On the selected work-from-home day, approximately how much time did you spend on meetings (digital or in-person)?". Each measure is standardized to mean zero and unit standard deviation across workers, so zero denotes the average worker. The firm characteristics are firm size, capital intensity, revenue per worker, labor share, and unionization. Firm size, capital intensity, revenue per worker, labor share, and unionization are grouped into quartiles (1 to 4, from lowest to highest), with cutoffs computed in the administrative data. The labor-share quartiles are formed among employer firms with a positive wage bill. Markers are hollow when the subgroup mean lies below the average worker and filled when above; marker shape denotes the ordered category within a variable. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

Figure B.5: Meeting Time on Office and Work-from-Home Days by Local Labor Market Characteristics

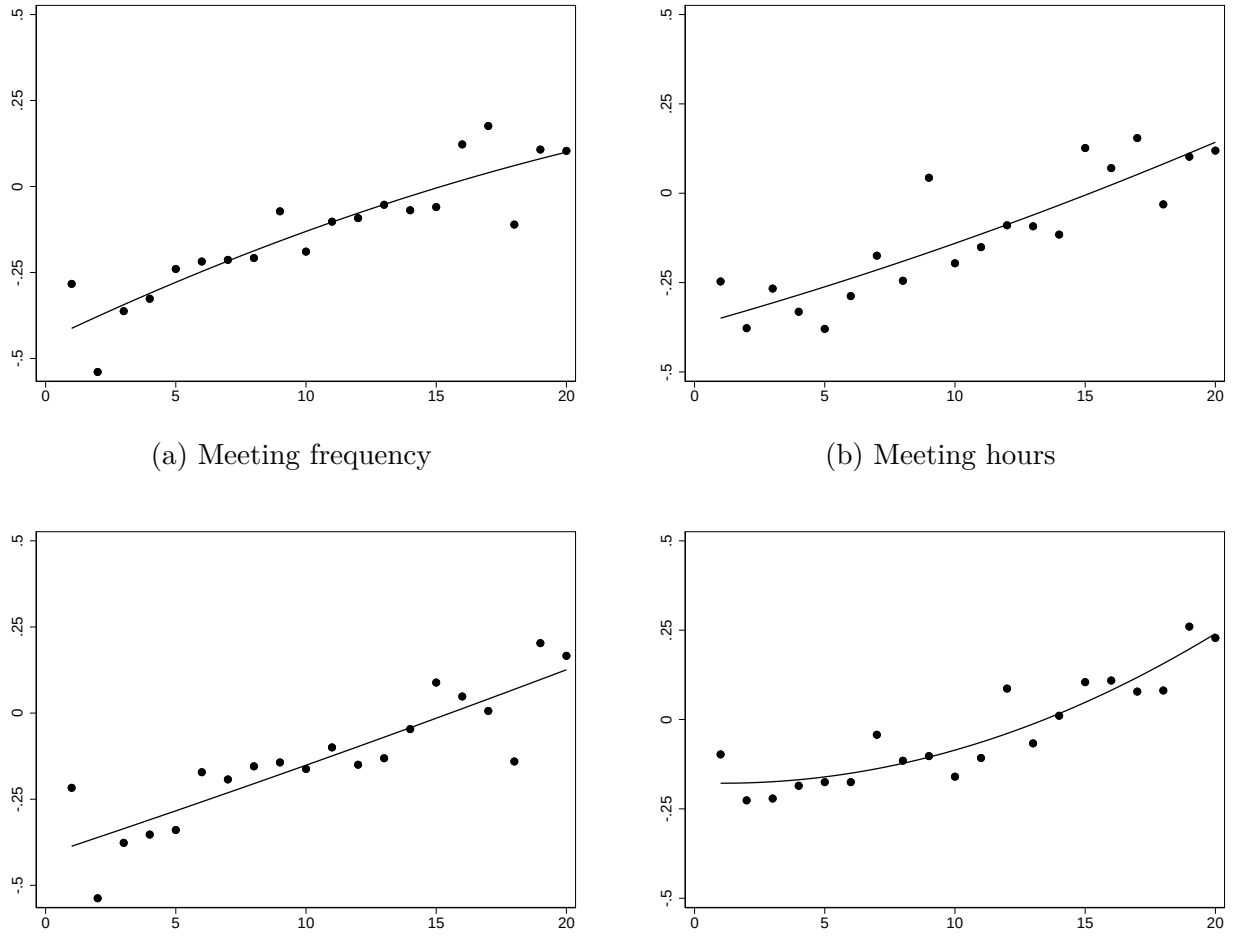


(a) Office days

(b) Work-from-home days

Notes: Each panel plots subgroup means of a standardized meeting measure across local labor market characteristics, with 95 percent confidence intervals. Panel (a) is meeting time on a selected in-office day, from the survey question "On the selected office workday, approximately how much time did you spend on meetings (digital or in-person)?", and panel (b) is meeting time on a selected work-from-home day, from "On the selected work-from-home day, approximately how much time did you spend on meetings (digital or in-person)?". Each measure is standardized to mean zero and unit standard deviation across workers, so zero denotes the average worker. The local labor market characteristics are local unemployment, local education, labor-market concentration, and urban versus rural residence. Local unemployment, local education, and labor-market concentration are grouped into quartiles (1 to 4): local unemployment from tightest to slackest, local education from least to most educated, and labor-market concentration from least to most concentrated. Urban denotes workers in one of Norway's major cities and rural all other, smaller municipalities. Markers are hollow when the subgroup mean lies below the average worker and filled when above; marker shape denotes the ordered category within a variable. The sample is the 9,099 workers in the regression sample; see Appendix Table A.3.

Figure B.6: Meeting Intensity and Firm Revenue



(a) Meeting frequency

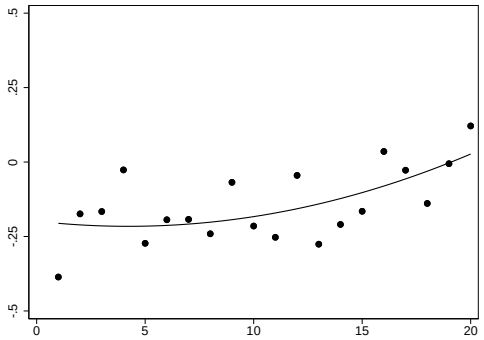
(b) Meeting hours

(c) Meeting time on office days

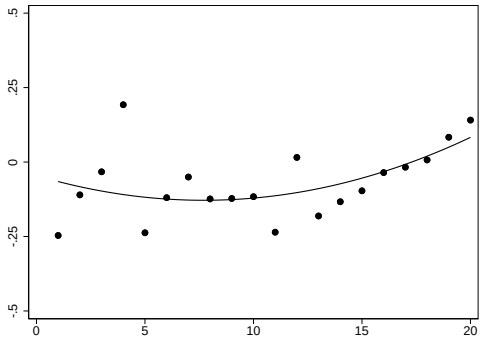
(d) Meeting time on work-from-home days

Notes: This figure reports the relationship between firm revenue and our principal measures of meeting intensity. Firms are sorted into twenty equal-sized bins (vigintiles) of their 2023 revenue, ordered from lowest to highest; the horizontal axis is the bin's mean revenue and the vertical axis is the bin mean of the meeting measure, standardized across workers (z-score). The measures are meeting frequency ("How often do you take part in meetings that involve coordination or team collaboration?"), weekly meeting hours ("On average, how much of your work week is spent in meetings?"), and meeting time on a selected in-office day and a selected work-from-home day (each from "On the selected office or work-from-home day, approximately how much time did you spend on meetings (digital or in-person)?"). Each point is a firm-level bin mean; the curve is a quadratic fit.

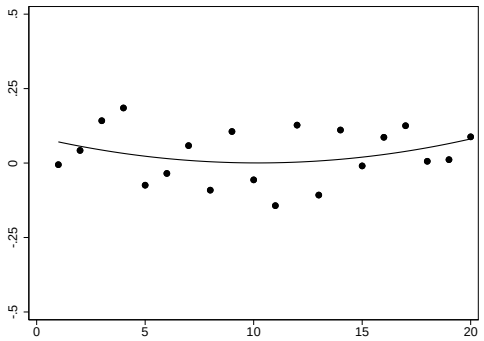
Figure B.7: Team Climate Measures and Firm Revenue



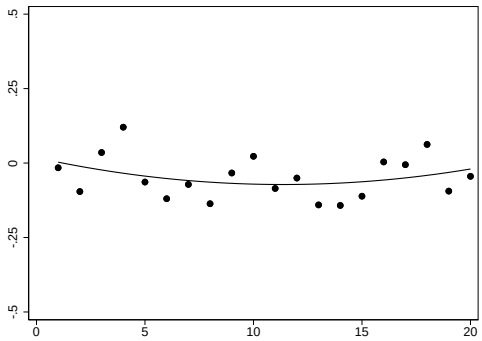
(a) Teamwork involvement



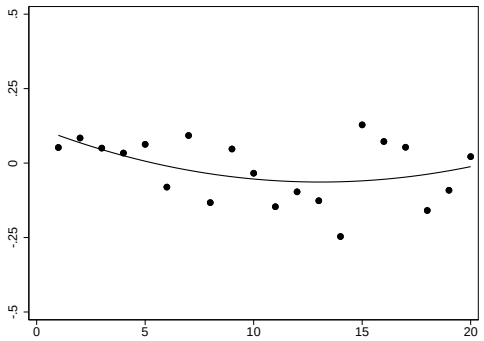
(b) Active collaboration



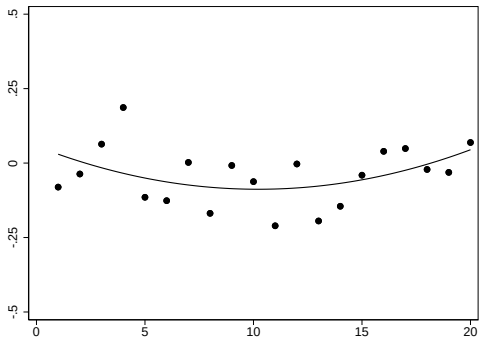
(c) Role clarity



(d) Shared responsibility



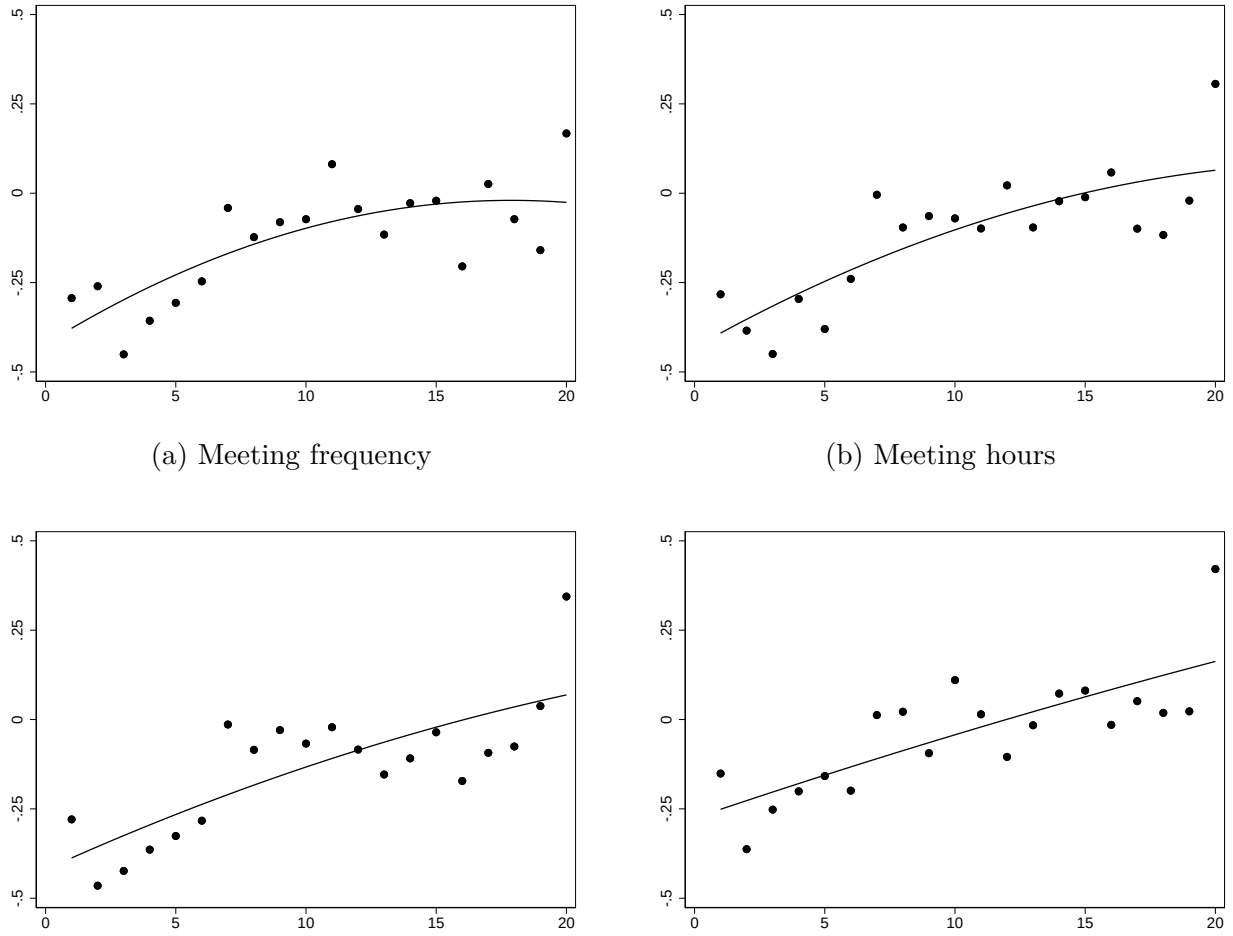
(e) Team support



(f) Collaboration index

Notes: This figure reports the relationship between firm revenue and measures of teamwork and workplace climate. Firms are sorted into twenty equal-sized bins (vigintiles) of their 2023 revenue, ordered from lowest to highest; the horizontal axis is the bin's mean revenue and the vertical axis is the bin mean of the measure, standardized across workers (z-score). The measures are teamwork involvement ("How often are you involved in teamwork or collaboration?"), active collaboration ("How often do you actively collaborate with colleagues in your day-to-day work?"), role clarity ("How clear do you feel your own role is in the team?"), shared responsibility ("Do team members usually share responsibility equally?"), team support ("How often do team members support each other in demanding tasks?"), and a collaboration index (the average of the last four). Each point is a firm-level bin mean; the curve is a quadratic fit.

Figure B.8: Meeting Intensity and Firm Revenue per Worker



(a) Meeting frequency

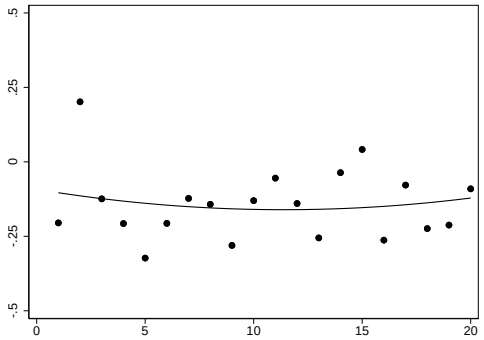
(b) Meeting hours

(c) Meeting time on office days

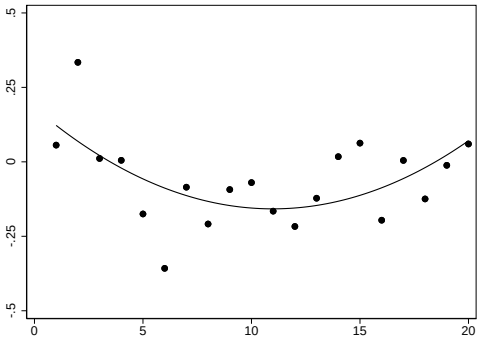
(d) Meeting time on work-from-home days

Notes: This figure reports the relationship between firm revenue per worker and our principal measures of meeting intensity. Firms are sorted into twenty equal-sized bins (vigintiles) of their 2023 revenue per worker, ordered from lowest to highest; the horizontal axis is the bin's mean revenue per worker and the vertical axis is the bin mean of the meeting measure, standardized across workers (z-score). The measures are meeting frequency ("How often do you take part in meetings that involve coordination or team collaboration?"), weekly meeting hours ("On average, how much of your work week is spent in meetings?"), and meeting time on a selected in-office day and a selected work-from-home day (each from "On the selected office or work-from-home day, approximately how much time did you spend on meetings (digital or in-person)?"). Each point is a firm-level bin mean; the curve is a quadratic fit.

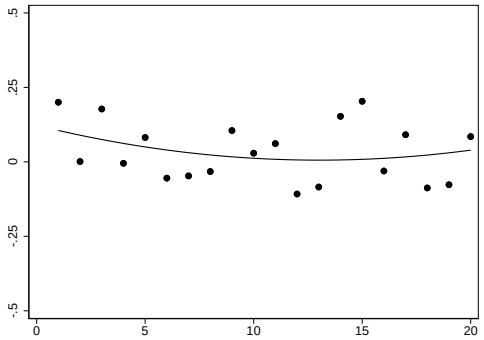
Figure B.9: Team Climate Measures and Firm Revenue per Worker



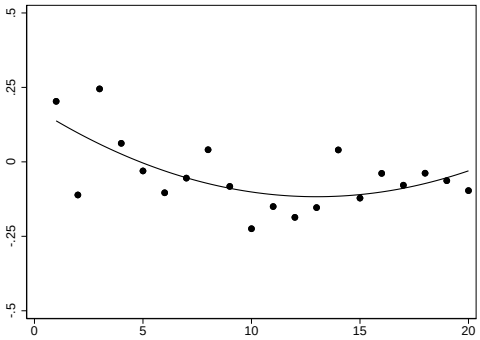
(a) Teamwork involvement



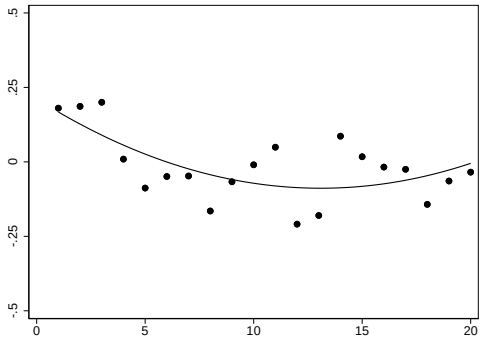
(b) Active collaboration



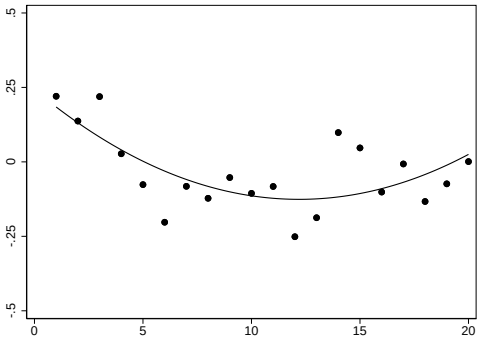
(c) Role clarity



(d) Shared responsibility



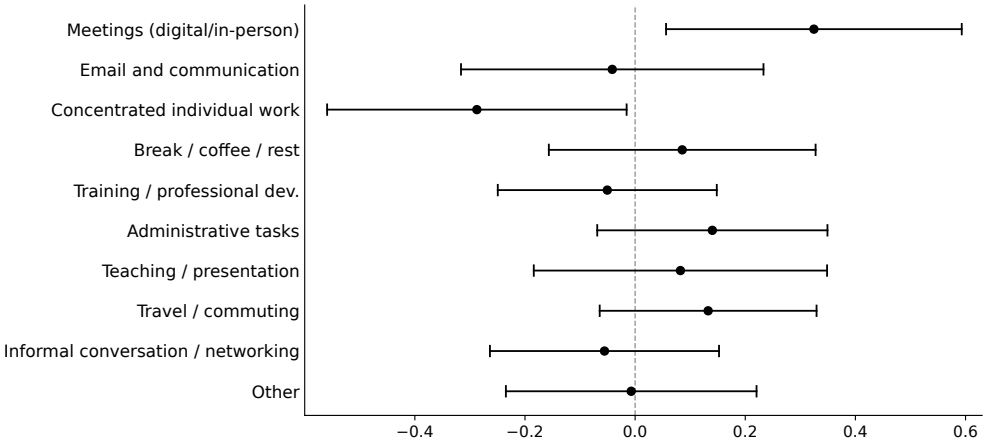
(e) Team support



(f) Collaboration index

Notes: This figure reports the relationship between firm revenue per worker and measures of teamwork and workplace climate. Firms are sorted into twenty equal-sized bins (vigintiles) of their 2023 revenue per worker, ordered from lowest to highest; the horizontal axis is the bin's mean revenue per worker and the vertical axis is the bin mean of the measure, standardized across workers (z-score). The measures are teamwork involvement ("How often are you involved in teamwork or collaboration?"), active collaboration ("How often do you actively collaborate with colleagues in your day-to-day work?"), role clarity ("How clear do you feel your own role is in the team?"), shared responsibility ("Do team members usually share responsibility equally?"), team support ("How often do team members support each other in demanding tasks?"), and a collaboration index (the average of the last four). Each point is a firm-level bin mean; the curve is a quadratic fit.

Figure B.10: Wage Rank Growth and Workday Activities, All Activities Entered Jointly



Notes: This figure reports how time spent on different workday activities predicts wage rank growth when all activities are entered jointly. Each point is a workday activity's coefficient from a single regression that enters all activities simultaneously—the coefficient of wage rank growth (in percentile points) on the standardized time a worker spent on that activity during their most recent in-office day—with its 95 percent confidence interval. The specification matches Figure 11: all regressions include individual controls and sector, occupation, and firm fixed effects; individual controls include gender, college education, age group, immigrant status, marital/cohabitation status, union membership, municipality of residence, and baseline wage. Standard errors are clustered by firm.

C Survey Questionnaire

C.1 Background Information

1. What is your name (first name(s) and last name)?
2. What is your current address?
3. What is your date of birth?
4. What is your current age?
5. What is your current occupation/title?
6. Which sector do you work in?
7. Do you work in the public or private sector?
8. What is your highest level of education?
9. How long have you been at the firm?
10. Do you have any supervisory or managerial responsibilities?
11. What best describes your current position (full time, part time, etc.)?
12. Roughly how many employees work at your workplace/site?

C.2 Teamwork Module

Teamwork Exposure

1. Do you regularly work with others (e.g., shared tasks, joint planning, or problem-solving)?
    - Yes
    - No
2. What types of teamwork or collaboration do you typically engage in? Select all that apply.
    - I work in a stable, long-term team with consistent members.
    - I participate in short-term or project-based teams that change frequently.

- I collaborate through meetings or check-ins but mostly work independently.
- I am part of cross-functional teams involving members from different departments.
- I engage in informal, ad hoc collaboration as needed.
- I lead or facilitate team-based activities or initiatives.
- I rarely or never engage in teamwork.
- Other: _____

3. How often are you involved in team-based work or collaboration?

    - Never
    - Rarely (less than once per week)
    - Occasionally (one to two times per week)
    - Often (most but not all days of the week)
    - Every day

Work Setting

1. What is your primary work setting?

    - Fully on-site / in person (at a central workplace or office)
    - Fully remote (working from home or another remote location)
    - Hybrid – mostly on-site, occasionally remote
    - Hybrid – mostly remote, occasionally on-site
    - Equally split between remote and on-site
    - Other (please specify): _____

2. How do you usually communicate or interact with your team? (Select all that apply) For each mode, choose: rarely (less than once per week), sometimes (one to two times per week), often (most but not all days of the week), or every day.

    - A. In person
    - B. Video calls (e.g., Zoom, Teams)
    - C. Messaging platforms (e.g., Slack, MS Teams chat)
    - D. Email coordination

3. How does working remotely or virtually affect your ability to collaborate with others?

    - It significantly hinders effective collaboration.
    - It somewhat hinders collaboration.
    - It has no noticeable impact.
    - It somewhat improves collaboration.
    - It significantly improves collaboration.
    - Not applicable – I do not work remotely or virtually.

Nature of Teamwork

1. How often do you actively collaborate with coworkers (e.g., sharing information, problem-solving, co-working) on day-to-day tasks? (1 = never, 10 = very frequently / multiple times per day)
2. How clearly do you understand your role within your team? (1 = very unclear, 10 = very clearly)
3. Do team members generally share responsibilities equally? (1 = never, 10 = always)
4. How often do team members support each other during difficult tasks? (1 = never, 10 = always)
5. How comfortable do you feel giving or receiving feedback within your team? (1 = not comfortable, 10 = very comfortable)
6. How would you rate the overall quality of teamwork in your workplace? (1 = very poor, 10 = excellent)

Structure of Teamwork

1. How clearly are team roles, responsibilities, and communication channels defined in your team? (1 = not clear at all, 10 = extremely clear)
2. Do you usually work with the same team members or do they change often?

    - I usually work with the same team members over time.
    - I work with a mix of recurring and new team members.
    - My team members change frequently from one project or task to another.

- Not applicable – I mostly work independently.

3. How much autonomy do you feel you have to make decisions about your own tasks within the team? (1 = no autonomy at all, 10 = full autonomy)

4. What is your typical role within the teams you work with?

   - I primarily lead or manage the team.
   - I primarily contribute as a team member.
   - My role varies depending on the project or context.
   - I do not usually work in a team setting.

Meetings and Coordination

1. How frequently do you attend meetings that involve coordination or teamwork?

   - Never
   - At least once a month, but not weekly
   - 1–2 times per week
   - 3–4 times per week
   - Daily

2. On average, how much of your workweek is spent in meetings?

   - No meetings
   - Less than 1 hour
   - 1–3 hours
   - 4–7 hours
   - 8–11 hours
   - 12–15 hours
   - More than 15 hours

3. How productive do you find team meetings? (1 = not productive, 10 = very productive)

4. In a typical meeting, how is time usually spent? Your best guess – the total should add up to 100%.

   - Sharing updates on what team members are doing: _____%

- Assigning or coordinating responsibilities for tasks/projects: _____%
- Discussing and problem-solving to make decisions: _____%
- Others, please specify: _____% (allow to add as many categories as needed)

5. In meetings, how would you describe your typical level of participation?
   - I primarily listen and rarely speak.
   - I speak occasionally when needed.
   - I contribute actively and listen equally.
   - I speak more than I listen or lead discussions.
   - My level of participation varies between meetings.

Productivity of Teamwork

1. Does teamwork help you complete tasks more efficiently? (1 = never, 10 = very often)
2. How often does poor teamwork reduce your productivity? (1 = never, 10 = very often)
3. Compared to working alone, how does teamwork affect your output speed? (1 = much slower, 10 = much faster)
4. Do you feel your team regularly meets its goals and deadlines? (1 = never, 10 = always)

Importance of Teamwork

1. How important is teamwork for you to perform your job effectively? (1 = not important, 10 = essential)
2. Is collaboration essential for achieving your individual work goals? (1 = not important, 10 = essential)
3. Do you feel teamwork is valued by your department or managers? (1 = not at all, 10 = highly valued)
4. Does working in teams help you learn new things, improve your skills, or develop professionally? (1 = not at all, 10 = always)

Preferences and Beliefs

1. Which work style do you generally prefer?
    - Working independently
    - Working in a team
    - It depends on the task or context
    - No strong preference
2. What team size do you find most effective for completing tasks?
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - More than 10
    - It depends on the task
3. Do you believe teamwork fosters innovation or creativity in your workplace? (1 = never, 10 = always)
4. Do you feel that teamwork improves morale or job satisfaction? (1 = not at all, 10 = always)

Work Schedules

Respondents were asked to open their calendar (e.g., Outlook, Google Calendar, etc.) and refer directly to their scheduled activities to accurately answer the following questions.

1. For each of the following locations, how many days did you work there last week? Please enter a number from 0 to 7 for each.

- In the office / on-site: _____ days
- At home / remotely: _____ days
- Did not work (e.g., days off, leave): _____ days
- Other location (please specify): _____ days – Location: _____

2. For each of the following locations, on average how many days do you work? Please enter a number from 0 to 7 for each.

   - In the office / on-site: _____ days
   - At home / remotely: _____ days
   - Did not work (e.g., days off, leave): _____ days
   - Other location (please specify): _____ days – Location: _____

3. Choose a recent workday when you worked at the office. Which of the following activities did you do? (Select all that apply.)

   - Meeting (digital or in-person)
   - Email and communication
   - Concentrated individual work
   - Break / coffee / rest
   - Training or professional development
   - Administrative tasks
   - Teaching / presentation
   - Travel / commuting
   - Informal conversation / networking
   - Other (please specify)
   - Never work at the office

   For each activity the respondent selected, they were then asked: "On the selected office workday, approximately how much time did you spend on [activity]?" with response options:

   - Under 1 hour
   - 1 hour

- 2 hours
- 3 hours
- 4 hours
- 5 hours
- 6 hours
- 7 hours
- 8 hours
- More than 8 hours

4. Choose a recent workday when you worked from home. Which of the following activities did you do? (Select all that apply.)

   - Meeting (digital or in-person)
   - Email and communication
   - Concentrated individual work
   - Break / coffee / rest
   - Training or professional development
   - Administrative tasks
   - Teaching / presentation
   - Travel / commuting
   - Informal conversation / networking
   - Other (please specify)
   - Never work from home

   For each activity the respondent selected, they were then asked: "On the selected work-from-home day, approximately how much time did you spend on [activity]?" with the same response options (Under 1 hour; 1 hour; 2 hours; 3 hours; 4 hours; 5 hours; 6 hours; 7 hours; 8 hours; More than 8 hours).

5. When does your work normally start and end? Report calendar times adjusted to 30-minute intervals.

For respondents who selected "Meeting" as one of the activities, the following follow-up questions were asked:

- Number of people who attended the meeting.
- What type of meeting was it? Select all that apply: planning and strategy discussions; collaborative work / brainstorming / problem-solving; project / task updates; presentations / information sharing; administrative topics (scheduling, budgets, etc.); training or skill development; feedback / appraisal; networking; informal conversations; other (please specify); none of these.
- Number of minutes speaking.
- Number of minutes listening.
- Number of minutes of informal conversation.

Open-Ended Questions

1. What do you enjoy most about working in a team? What do you find most challenging? (open-ended)
2. Can you describe a recent experience where teamwork was especially effective (or ineffective)? What made it that way?
3. In your opinion, what are the key ingredients of a successful team? (open-ended)
4. How do you handle disagreements or conflicting opinions in a team setting? (open-ended)
5. How has remote or virtual work affected your experience of teamwork? (open-ended)
6. How has AI been incorporated into teamwork? (open-ended)
7. Can you describe how your team typically approaches problem-solving or decision-making? (open-ended)

C.3 Skills Survey Module

Work Hours

1. How many hours a week are specified in your work contract?
2. How many hours do you typically work each week?

Time Spent on Daily Activities

Respondents were asked: Please indicate approximately how much of your typical workday is spent on each of the following activities (1 = not at all, 10 = all the time). These categories are not mutually exclusive.

1. Working with machines (not computers)
2. Working with your hands
3. Completing physically demanding tasks
4. Performing repetitive tasks
5. Learning new skills
6. Developing existing skills
7. Encountering new challenges
8. Working with computers
9. Analyzing data
10. Solving analytical problems
11. Working with colleagues at the same level of seniority
12. Working with people at a higher level of seniority
13. Working with people at a lower level of seniority
14. Collaborating on projects
15. Completing administrative work
16. Working with clients
17. Helping others with job-related tasks
18. Leading groups
19. Working from home or a remote location
20. Reading
21. Writing

Perceptions of Work

Respondents were asked: To what extent do you agree with the following statement? (1 = strongly disagree, 10 = strongly agree)

1. I make strategic decisions at work.
2. I have autonomy in my job.
3. Many people at my company could do my job.
4. It would be easy for my company to train someone new to do my job.
5. My job provides opportunities to learn new skills.

Supervisory Role

1. How many people report to you at your workplace?
    - 0
    - 1–3
    - 4–10
    - 11–20
    - 21–50
    - 51+

Skill Importance

Respondents were asked: Please indicate how important each of the following skills is for your job (1 = not important at all, 10 = very important).

1. Manual skills
2. Analytical skills
3. Teamwork
4. Service orientation
5. Leadership
6. Computer programming

7. Decision-making
8. Learning quickly
9. Adapting to new technologies
10. Working under pressure
11. Communication
12. Working with specialized machines (not computers)
13. Using AI tools (e.g., ChatGPT, Grok)

Self-Reported Progress

Respondents were asked: To what extent do you agree with the following statements? (1 = strongly disagree, 10 = strongly agree)

1. Over the past year, I have learned new skills which make me better at my job.
2. Over the past year, I have developed existing skills which make me better at my job.
3. I am better at doing my job today than I was one year ago.

Skill Development at Work

Respondents were asked: Please indicate to what extent you believe you have developed the following types of skills at your current workplace (1 = to a very small extent, 10 = to a very great extent). For skills they reported developing, respondents were asked how they learned each skill.

1. Manual skills
2. Analytical skills
3. Teamwork
4. Service orientation
5. Leadership
6. Computer programming
7. Decision-making

8. Learning quickly
9. Adapting to new technologies
10. Working under pressure
11. Communication
12. Working with specialized machines (not computers)
13. Using AI tools

For each skill above, respondents with applicable responses were asked: How did you learn this skill? Select all that apply.

- Formal training provided by the firm
- Workshops or conferences led by external providers
- Formal education sponsored by the firm
- Learning from co-workers
- Learning by doing
- Self-directed learning
- Participation in a mentoring program
- Other (please specify)

Transferability of Skills

Respondents were asked: To what extent do you agree with the following statements? (1 = strongly disagree, 10 = strongly agree)

1. The skills I have learned would transfer to other firms.
2. The skills I have learned would transfer to other occupations.
3. The skills I have learned would transfer to other industries.

Training History

1. How many years ago did you last participate in formal training at your firm?

    - Never
    - Enter number of years: _____

Incentives and Mobility

Respondents were asked: To what extent do you agree with the following statements? (0 = strongly disagree, 10 = strongly agree)

1. I have incentives to learn skills because of promotion opportunities within my job.
2. I have incentives to learn skills for job opportunities outside my job.
3. The skills I had when I started could have helped me find other jobs in my field.
4. If I wanted to, I could find work at the same or better salary within a reasonable commute.
5. I need to keep learning new things to keep my skills relevant.

Pay and Progression

Respondents were asked: To what extent do you agree with the following statements? (0 = strongly disagree, 10 = strongly agree)

1. I am satisfied with opportunities for pay growth.
2. I am satisfied with my current pay.

Importance of Learning Opportunities

1. How important were learning opportunities in your decision to join your current workplace? (1 = not important, 10 = very important)

    - Learning opportunities for career progression inside the firm
    - Learning opportunities for career progression outside the firm

Workplace Connectedness

1. Please, look at the circles diagram below. Then, consider which of these pairs of circles best represents your connection with your colleagues. By selecting the appropriate number below, please indicate to what extent you and your colleagues are connected. (1 = least connected, 7 = most connected)

