When do Coworkers Socialize? Institional Differences and Informal Social Relations amongst Workers

Abstract

Informal social relations matter a great deal for both employees and employers. Social ties help workers find work and advance once they do. For employers, they improve job satisfaction job commitment and group performance. Yet while there is a rich body of research on the causes and consequence of individual-level variation in social relations for workers, we know very little about how informal social relations vary between kinds of work and workplaces, and how employers might foster or hinder sociality between coworkers. This article uses time diaries from the American Time Use Survey, 2003-2016, to examine the relationship between coworker sociality and job, workplace, and occupational characteristics. It finds large variations in coworker sociality between occupational classes and by insititutional characteristics, including union status, schedule flexibility, and levels of team-based work. These patterns are hypothesized to be a result of levels of in-work interaction, multiplexity of in-work interaction, and status homophily.

Introduction

Informal social relations matter a great deal for both employees and employers. Social ties help workers find work (Granovetter 1973), enjoy their work (Roscigno, Sauer, and Valet 2018), and win promotions (Podolny and Baron 1997). For employers, informal social ties between coworkers matter for both individual and team performance (Mehra, Kilduff, and Brass 2001; Oh, Chung, and Labianca 2014). Yet while there is a rich body of research on the causes and consequence of individual-level variation in social relations for workers, we know very little about how sociality varies between kinds of work and workplaces, and how employers might foster or hinder sociality between coworkers: do coworkers socialize more with coworkers if their job is to be social? Does the intensity of formal workplace interaction spill over into informal interaction? Do coworkers socialize more or less with other coworkers in workplaces with more egalitarian social relations?

Scholars of organizational behavior have long recognized the importance of informal social relations in workplaces. Drawing on social capital theory, this work has shown how social relationships can provide information (Granovetter 1973; Burt 1992), support (Podolny and Baron 1997), and allies (Hodson 2001). These multiplex ties in turn effect many workplaces outcomes, including hiring (Fernandez, Castilla, and Moore 2000; McDonald 2011), advancement (Podolny and Baron 1997), and wages (Seidel, Polzer, and Stewart 2000), and disparities in the the initial distribution of these ties between different status groups, for example by gender or race, contribute to workplace inequalites (McDonald 2011; Fernandez and Fernandez-Mateo 2006). But with the exception of work on homophily (McPherson, Smith-Lovin, and Cook 2001), variations in social relations across workplaces, and how these variations come about, have received less attention in the orginaztional literature.

In contrast, social relations have not traditionally been a prominent in the sociology of work and occupations. Scholars have instead focused on ascriptive characteristics, such as race or gender, or institutional frameworks. In the last ten years, scholars have called for a theoretical reiorientation towards a relational study of inequality, with a focus "on the role of social relationships, both between people and positions within organizational contexts, as the proximate cause of inequalities [in workplaces]" (Tomaskovic-Devey 2014; also see Vallas and Cummins 2014). Drawing on Tilly (1998), this theoretical approach focuses on how mechanisms such as social closure, exploitation and claims making produce inequalities within and across organizations.

Empirical work in this vein has shown how organizational and cultural contexts interact with ascriptive characteristics to produce large differences in wages by gender and race (Tomaskovic-Devey, Avent-Holt, and Zimmer 2009; Tomaskovic-Devey and Avent-Holt 2017), and how institutional contexts create opportunities for supervisory abuses of power or worker resistance (Hodson, Roscigno, and Lopez 2006, @Roscigno2009; Roscigno and Hodson 2004). Yet while recent relational research has demonstrated the importance of coworker

relations for workplace outcomes (Roscigno, Sauer, and Valet 2018), there has been little focus on the how relations might vary across work contexts. This is even true of ethnographic work, the methodology of which lends itself to relational thinking. Randy Hodson, in a meta-analysis of workplace ethnographies, notes that "studies of coworker relations have held at best a secondary place in the analysis of the workplace, lagging far behind the study of sociotechnical relations, labor process control, organizationa structures, and individual attributes and attitudes" (Hodson 2001)

Both organizational and occupational scholars agree that informal social ties have become more important in workplaces, following a shift from bureacratic and hierarchical organizational frameworks to increasingly team-based post-Fordist systems (Smith 1997; Vallas 2003; Ezzamel and Willmott 1998). Given this, and the large body of work demonstrating the importance of informal social ties in workplaces, our lack of understanding of how they vary between workplaces is an important gap in the literature. Sociality – workers socializing with each other – is an important dimension of this. Socializing outside of work provides a setting in which information can be exchanged and friendships strengthened (Oh, Chung, and Labianca 2014). For the sociology of work, understanding workplace variation in informal social ties sheds light on the mechanisms that lead to different levels of ascriptive inequality across the occupational structure, and that, at the same time, enable solidarity and resistance. For the organizational literature, understanding how informal social ties differ by institutional characteristics can advance our understanding of the institutional contexts in which social capital matters.

Part of the reason for the dearth of research in this area is lack of data. It is rare for either organization-level data, commonly used in the organizational behavior literature, or the nationally representative surveys favored by sociologists of work to contain detailed information on patterns of sociality. The American Time Use Survey (ATUS) presents a solution to this problem by combining data on both sociality and work. It collects detailed information on how people spend their time, including social time, and with whom they do so. As a subsample of Current Population Survey, ATUS also includes a number of work context measures. Using ATUS, this paper, first, develops a measure of informal social relations between coworkers: coworker sociality, which is the amount of time a worker spends in social and leisure activities with other coworkers. Second, it shows that there is indeed considerable variation in coworker sociality by work contexts, by charting variation in coworker sociality across occupational classes. Third, it suggests some tentative explanations for this variation, investigating the difference in coworker sociality by job characteristics and institutional context. I find that little evidence for a relationship between job characteristics and work sociality, but strong evidence for workplace and occupational context. Sociality is more frequent in more egalitarian (unionized) workplaces, controlling for occupational class and selection on socialibility, and more frequent in workplaces that facilitate in-work interactions between coworkers.

The Effects of Coworkers

Understanding the relationship between work characteristics and coworker sociality is important because informal social ties, formed in part through social interactions outside of formal work, matter for many individual and collective workplace outcomes. For individual workers, there is consistent evidence that informal social relations with coworkers, or future coworkers, matter for hiring, advancement, and job satisfaction. Evidence is most extensive for hiring, where researchers have long found that personal contacts are an important way in which workers find out about new jobs, particularly or blue collar works [Parnes]. Subsequent research has found that the social status of workers' contacts, the nature of their ties to those contacts, and the exent of their social network all matter for getting jobs, and they matter both on the supply side, by providing information about job opportunities, and on the demand side, with employers utilizing the social networks of their existing workers to make hiers (Granovetter 1973; Lin 1999; Fernandez, Castilla, and Moore 2000).

Once hired, informal social ties continue to matter for workers. Informal ties are associated with faster human capital accrual (Morrison 2012), and increased creativity (Fleming, Mingo, and Chen 2007), and workers hired as referrals - that is, workers with pre-existing relationships with other coworkers - receive better evaluations (Burt 1997). At least in some settings, the relationship between evaluation and and social capital holds net of productivity (Shwed and Kalev 2014). Unsurprisingly, then, informal social ties improve intrafirm

job mobility (Burt 1992; Podolny and Baron 1997). As well as material rewards, informal social ties, and specifically friendships, with coworkers, are associated with markedly higher job satisfaction (Morrison 2012; Roscigno, Sauer, and Valet 2018). The relative size of the association between job satisfaction and friendship is also notable. Roscigno, Sauer, and Valet (2018), using data from Germany, compare the comparitive effects of coworker relations and organization structure on job satisfaction, and find that coworker relations matter as much for job satisfaction as any aspect of bureaucratic structure or formal rules.

Informal social ties amongst coworkers also have meso- and macro-level consequences. Social capital is unequally distributed by status: men and whites tend to have more and more senior contacts in workplaces (McGuire 2002; for a review see McPherson, Smith-Lovin, and Cook 2001). Because social capital is consequential at the individual level, it's unequal distribution produces organizational and societal inequalities. Theoretical models of network inequalities suggest even small disparities in the initial networks can lead to large workplace outcomes over time (Calvó-Armengol and Jackson 2004), while empirical research has found network inequalities to contribute to racial, ethnic, and gender inequalities in both hiring and salary (Petersen, Saporta, and Seidel 2000; Marmaros and Sacerdote 2002; Seidel, Polzer, and Stewart 2000)

Second, employees' informal social ties can also affect employer's outcomes. There is some evidence that job referals from coworkers produce better matches than non-referred applicants, and so improve productivity (Fernandez, Castilla, and Moore 2000, @Castilla2005). Amongst workers, Coworker friendships improve organizational commitment (Morrison 2012; Roscigno, Sauer, and Valet 2018), which is in turn associated with a range of workplace outcomes (Riketta 2002; Meyer et al. 2002). And meta-analysis of workplace ethnography suggests that the extent to which coworkers seek each other out is necessary for solidarity to develop (Hodson 2001). What solidarity does, however, varies by context: in workplaces with good management pratices, worker solidarity increases efficiency. In workplaces with abusive management, however, solidarity is a necessary precondition for individual and collective resistance (Hodson (2001); Roscigno and Hodson (2004); Roscigno, Lopez, and Hodson (2009)).

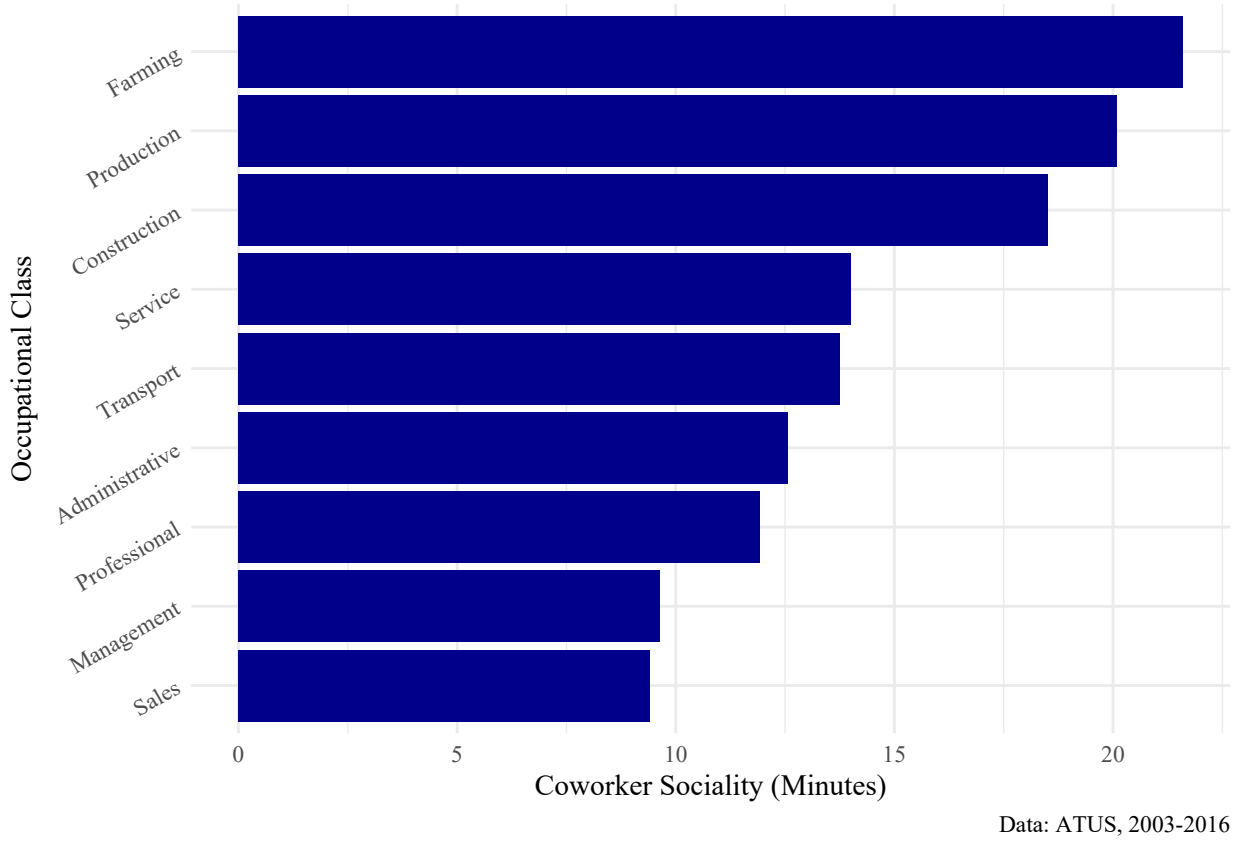
Researchers have also asked why informal social relations cause workplace outcomes, and find that kinds of tie perform different roles and different optimal network structures. Dating back to Granovetter (1973), scholars have argued that informal social ties carry with them information and other material resources, and do so particularly effectively across large, sparse, networks, containing structural holes (Burt 1992; Podolny and Baron 1997). Podolny and Barron (1997) argue that as well material resources, dense networks of ties can also convey social identity, by which they mean a normative structure that provides role expectations. They further argue that informal social relations convey identity when they provide social support or friendship, and while they do not find a relationship between social support and job mobility, subsequent work has found a strong relationship between workplace social support and workplace satisfaction (Roscigno, Sauer, and Valet 2018).

What kind of tie does socializing outside of work imply? By Podolny & Barron's typology of material/informational vs identiy-based, it is clear that sociality can convey both. Informal social relations between workers often involve informational exchange in the form of gossip, and there is evidence that gossip is both a cause and consequence of trust between coworkers (Ellwardt, Steglich, and Wittek 2012). As Oh and cauthors point out, however, the setting of coworker sociality is important. When it is outside of work, as it is in the measure used here, formal roles are de-emphasized and affective relationships can more easily develop (Oh, Chung, and Labianca 2014). This in turn makes it more likely that the relationship will become one that serves multiple roles, and across which many kinds of resources can be transferred.

The Context of Coworker Relations

Despite the extensive body of research showing the consequences of informal social relations, we know very little about the patterning of sociality amongst coworkers. We do not know if there is meaningful variation in the extent to which workers socialize with their coworkers, and we do not know if any such variation is patterned by aspects of work. Figure 1 plots the average number of minutes per day spent socializing with colleagues, by occupational class. It shows considerable variation: workers in management and sales occupations socialize with coworkers on average for less than ten minutes a day, only half of the time spent

socializing by workers in construction, production, or farming occupations. These patterns may be the result of a number of different mechanisms: occupational differences in workplace sociality may be the result of the selection of workers on sociality into different occupations, of the resource constraints imposed by different jobs, of the ways in which work shapes personalities and preferences, and the ways in which work shapes the extent and multiplexity of non-social ties between coworkers, as well as the comparative status of those coworkers. The following selection examines these mechanisms in detail and lays out the related hypotheses and measures used to test them.



Selection into jobs, organizations, and occupations is both a supply and demand side mechanism: workers look for jobs they believe to be a good fit for their interests, personality, and qualifications, and employers seek hire applicants they believe will be a good fit for the organization and job. Both dimensions could lead to worker selection on the propensity to socialize with coworkers: sociable workers may apply for jobs that require working with people, or into organizations with a reputation as sociable. Equally, employers hiring for person-centered jobs may look for candidates who appear sociable. I therefore include a binary measure of sociality with friends to control for a general propensity towards sociality. coworker sociality should be higher for those who socialize with friends, but it is likely occupational differences in coworker sociality will remain.

But work obviously creates as well as reflects individual difference. It does so in two particularly relevant ways. First, jobs provide two resources both potentially important in constraining individual sociality: time and money. Insofar as coworkers socialize in ways that cost money, such as by going to bars, movies, or performance arts events, sociality will be higher amongst respondents with higher incomes. And all activities, whether or not incur a financial cost, require time, and a major constraint on workers' time is, in fact, working. Workers should therefore socialize less if they work longer hours.

Work creates individual difference in a second important way, by shaping workers' preferences and personalites. It is long establised that the content of job tasks can change personality and preferences (Kohn and Schooler 1978, 1982). Using longitudinal data, Kohn & Schooler found that the substantive complexity of work tasks at time 1 is associated with changes in the cognitive demands of leisure activities at time 2. This work has not,

to my knowledge, been extended to the social content of work and whether it influences workers' propensity to socialize. I test this using an occupational measure of the importance of the prominence of interacting with people for a given occupation, and predict that more person-focused occupations, coworker sociality will be higher.

Of course it takes (at least) two to tango – or otherwise socialize – with coworkers. As well as influencing individual capacities and propensities, workplaces may structure socializing between coworkers by structuring other kinds of coworker contact. First, it is more likely that coworkers will choose to socialize with each other outside of work if they interact more at work. Two of the most important trends in work organization over the past three decades, the rise of team-based work and non-standard and flexible schedules, are salient for this (Vallas 1999; Mcmenamin 2007; Kalleberg 2000). When workers have flexible schedules, there is likely to be greater schedule variability between workers. As a consequence, the schedules of different workers in a workplace are less likely to align, and so a worker is less likely to work regularly with the same coworkers. Conversely, working in teams increases the amount of time spent with the same set of coworkers. I test this using two occupational measures, and predict coworker sociality will be positively associated with team work and negatively associated with schedule flexibility.

As well as the intensity of interaction between coworkers, both the kind of interaction between and the comparitive status of coworkers also varies between workplaces. Previous research has found both that social contact is more frequent amongst friends who share multiplex ties (Verbrugge 1979), and that workplace friendships are more likely to form if multiplex ties already exist (Ellwardt, Steglich, and Wittek 2012). An important source of variation in the structure of coworker relations is the presence of a labor union in a workplace. Being union members together creates a different set of relations between coworkers: it directly creates a set of nonwork interactions, through membership meetings and other union-organized events.

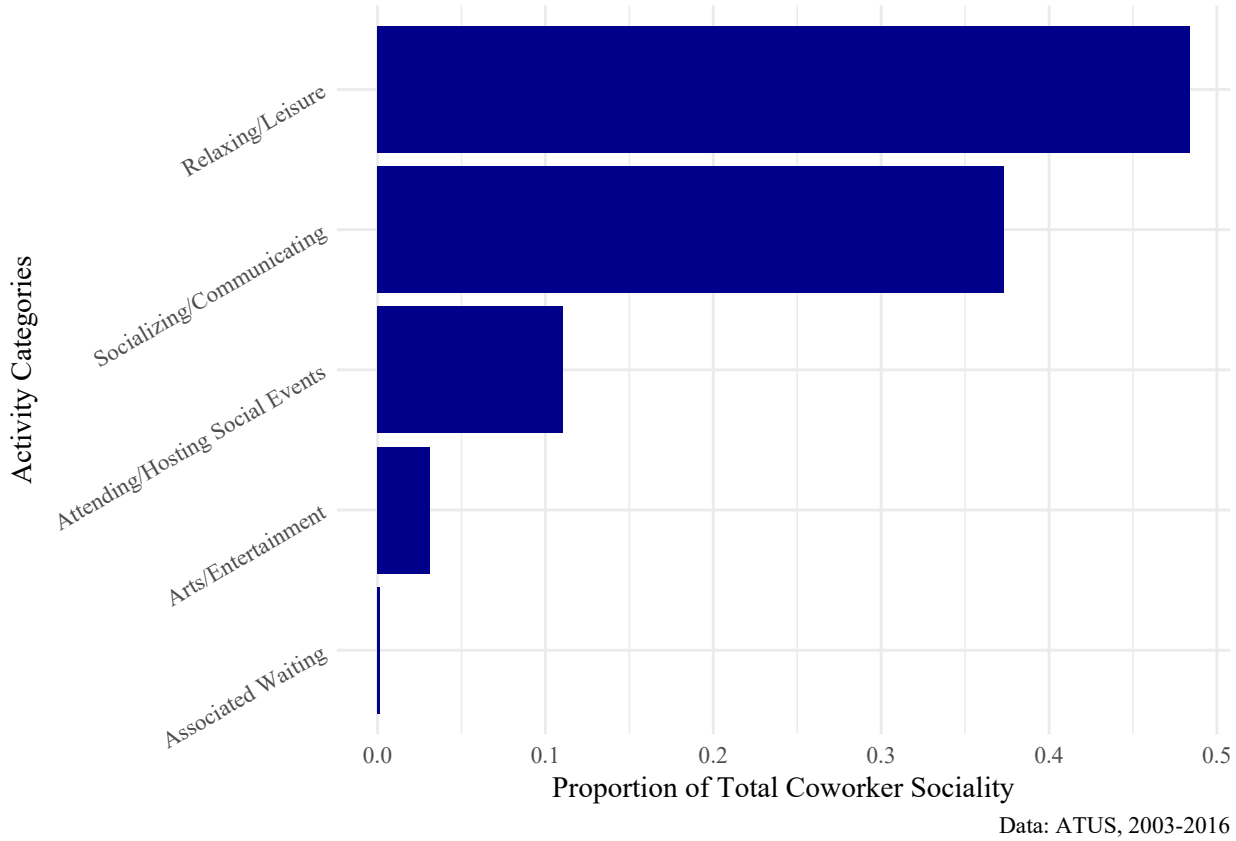
Union presence in a workplace also creates a shared social identity. Just as some kinds of workplace ties create role expectations (Podolny and Baron 1997), so shared group membership creates shared norms and so reduces uncertainty surrounding interaction (Hewstone, Rubin, and Willis 2002; Hogg 2000). A very large body of research in both lab and real-world settings has shown shared group membership to increase cooperation, ingroup favoritism, and the enforcement of norms (Bowles 2006; Goette, Huffman, and Meier 2006), and an almost as large body of work finds homophily in social ties by status (McPherson, Smith-Lovin, and Cook 2001). But as well as creating a shared status marker, union membership likely flatens other workplace status differentials. Being covered by a union contract equalizes work benefits and usually ensures workers have similar rights and grievance processes, and this should further increase status homophily amongst unionized coworkers. I therefore predict that coworker sociality will be higher amongst workers who are members of labor unions. Status homophily also implies that coworker sociality will be lower for workers in management occupations, because they are likely to have fewer coworkers of equivalent status in their workplace than non-management workers.

Data and Analytical Strategy

This paper uses time use, job and workplace measures drawn from the American Time Use Survey, merged with occupational measures from ONet and the Current Population Survey schedules supplement. The American Time Use Survey administers time diaries to a subset of about 12000 of Current Population Survey (CPS) respondents annually. These diaries prompt respondents to list their activities in fifteen minute increments for a period of 24 hours up to 4AM on the day of the administration of the survey. Respondents are also asked to list the location of activities and who, if anyone, was also present for the activity. For this paper, I use data on employed respondents aged 25 to 65 in full time work for all years from 2003-2016. I exlcude self-employed workers to limit the number of workers in the sample without coworkers and part time workers to limit variation in attachment to the labor force. This leaves a sample of 54,939 respondents.

ATUS researchers code the survey responses into several hundred activities, which they nest in a series of increasingly broad categories. The highest level contains 18 activity groupings, including personal care; work; eating and drinking; and socializing, leisure and relaxing. Socializing, relaxing and leisure contains four substantive sub-categories: socializing and communicating, attending/hosting social events, relaxing

and leisure, and arts and entertainment. Figure 2 plots the proportion of time spent with colleagues is in each of these sub-groupings: the most time is spent on activities categorized as first, relaxing and leisure, and second, socializing. At the most detailed level, two specific activities account for more than 60% of the total: socializing and relaxing/thinking. Only two other activities each make up more than 5% of the measure: attending or hosting parties/receptions/ceremonies, and watching TV/movies. Table A1 lists detailed activities in the measure along with their proportional contribution.



It is possible that the measure could either over- or under-estimate workplace sociality, if it either includes activities that while undertaken in the presence of others are not truly sociable, or excludes activities that are in fact sociable. In the case of the former, the measure includes some behaviors, such as reading, which are rarely participatory. However, the four most popular activities, discussed in the last paragraph, are all commonly social activities, and these combined make up around 75% of the measure. It is more likely that the measure underestimates worker sociality, as ATUS separately classifies some often social activities, such as playing sports and eating and drinking. ATUS does not, unfortunately, have a way to distinguish activities done with others from solitary activities done in the presence of others, such as eating lunch alone in a crowded cafeteria, and so I excluded activities not categorized as social/leisure by ATUS. For this reason, the measure is likely conservative. As a sensitivity check, I construct two further measures of worker sociality, one more and one less expansive than the measure used in the main analyses. For the former, I expand the main measure to also include activities in the broad categories of eating and drinking, volunteering, doing or watching sports, and travelling. For the latter, I only include activities, which, at the most detailed level, ATUS categorizes as "socializing". Replicating the main analyses with these two measures produces similar results: the direction of the relationship between the dependent variable and all key coefficients remains the same. Some predictors lose significance, but this it to be expected, as, for the stricter definition, there are simply far fewer coworkers socializing, while the broader one introduces interactions which are arguably non-social, thus introducing noise into the measure (Tables A2 and A3).

ATUS also prompts respondents to list certain kinds of individuals present during an activity. To construct

the dependent variable, I sum the total minutes spent in activities categorized as "socializing, leisure and relaxing", for which "coworkers, colleagues, or clients". While, ideally, the measure would exclude activities undertaken solely with clients but not colleagues, ATUS does include separate client and coworker categories. Instead I run a further sensitivity check: I rerun the models excluding professional, managerial, and service workers, as these categories include most client-facing occupations, and this produces substantively similar results (Table A4).

The key independent variables are drawn from ATUS, CPS, and ONet. Because ATUS is a CPS module, respondents provide a rich set of employment measures. I use hours worked per week, weekly earnings (logged), and a labor union membership dummy variable. I use the census occupational schema to construct a broad occupational class measure with nine categories: professional, managerial, service, sales, administrative, farming, construction, production, and transportation occupations. I also use the CPS schedule supplement from 2001 and 2004 to construct a contextual measures of schedule flexibility, which measures the proportion of individuals in an occupation with flexible schedules. For both ATUS and CPS, I used data prepared by IPUMS (Hofferth, Flood, and Sobek 2018; Flood et al. 2018)

ONet, successor to the Dictionary of Occupational Titles, uses workplace surveys to measure occupation-level work characteristics on a comprehensive range of topics. (Hadden, Kravets, and Muntaner 2004). ONet is often used, as here, in combination with person-level data, to measure occupational exposures (Cifuentes et al. 2010; **???**). I use two scales: the importance of working in a team to an occupation, and the extent to which dealing with other people is a central job task. ONet uses Standard Occupational Codes (SOC), while CPS and ATUS code occupations using less detailed Census Occupational Codes. I used a crosswalk to merge the ONet measures, and averaged across categories when multiple SOC codes correspond to a single Census code. All ocupational measures are standarized to facilitate comparisons.

From ATUS I also take a series of time use and demographic controls. Two are particularly important for controlling for selection into work by propensity to socialize: outside care commitments, and general sociality. Having to spend a great deal of time doing care work obviously limits opportunities to socialize with coworkers, but also shapes work opportunities, as the extensive literature on the motherhood wage penalty demonstrates (Gough and Noonan 2013) . I therefore construct a time use measure that sums time spent doing all forms of care work in relation to both children and adults. As discussed above, workers may choose jobs, and employers may choose workers based on their social propensity. I therefore use a general measure of social time. It includes the same activities as the dependent variable, but includes time spent with with friends rather than time spent with coworkers. For further demographic and technical controls, I include survey year and day (not shown), gender, race, hispanicity, and age and its quadratic. I include a three category race measure (Black/White/Other), and a five category educational attainment measure (less than high school degree, high school degree, some college, college degree, graduate degree). Whether or not workers spend time with their colleagues is in part dependent on how much time they have to spend. I try to control for this both directly and indirectly. I include both marital status and a categorical measure of how many children the respondent has (0, 1, 2, 3+), as potential further sources of non-work committments. Table 1 reports descriptive statistics.

I examine the mechanisms linking work to coworker sociality using three models. The first model establishes baseline differences in coworker sociality by occupational class, net of non-workplace individual characteristics. As well as occupational class, I include care responsibilities and social propensity to control for key selection mechanisms, as well as all demographic and technical controls discussed above. Model 2 examines mechanisms by which work may shape individual preferences towards and constraints on socializing. It adds measures of hours, wages, and a measure of the centrality of dealing with people to work tasks in an occupation. Model 3 examines mechanisms by which work changes the relational context for socializing, net of individual preferences and constraints, by regulating levels and kinds of coworker contact at work, and by influencing levels of status homphily amongst coworkers. It adds an individual measure of labor union status, and occupational measures of schedule flexibility and the importance of teamwork. Most respondents do not socialize with coworkers over the course of a single day, and so have a value of zero for the dependent variable. I therefore estimate the models with quasi-poission regression, to account for overdispersion (Zeileis and Kleiber 2008). Using ordinary least squared regression instead, the significance and comparitive size of associations are very similar to those reported below, but all associations are much larger. Weights are used

for all models.

Table 1: Descriptive Statistics

Variable	MeanProp	SD
Coworker sociality (mins)	3.990	16.500
Female	0.420	0.500
Care work (mins)	58.100	115
Married	0.630	0.490
Hispanic	0.130	0.330
Friend sociality (mins)	16.100	73.500
Race		
...Asian	0.040	
...Black	0.100	
...Other	0.020	
...White	0.830	
Education		
...<HS	0.070	
...GED	0.020	
...HS	0.260	
Some College	0.250	
Bachelors Degree	0.400	
Children in household		
...0	0.600	
...1	0.170	
...2	0.160	
...3+	0.070	
Hours worked	44.700	8.340
Weekly earnings (dollars)	1,000	642
Social work tasks (occupational)	63.500	12.600
Occupational Class		
...Management	0.120	
...Professional	0.290	
...Service	0.110	
...Sales	0.080	
...Administrative	0.150	
...Farming	0.010	
...Construction	0.100	
...Production	0.080	
Transport	0.060	
Part of labor union	0.150	0.360
Team based work (occupational)	81	8.550
Schedule flexibility (Occupational)	0.360	0.190

Results

Table 2 reports results from all models. Model 1 shows that large occupational differences in coworker sociality remain after controlling for demographics, care responsibilities, and a general propensity to socialize. Sociality is highest in traditional blue collar occupations, with working in production occupations versus professional ones associated with an additional .7 minutes per day spent socializing with colleagues. coworker sociality is lowest in management occupations, with respondents in such jobs on average socializing with

colleagues for half a minute less per day, a result consistent with the prediction that sociality will be higher amongst coworkers homophilous by status.

I find mixed evidence for the importance of mechanisms that shape individual constraints and preferences. Hours worked, I argue above, should be negatively associated with coworker sociality because they constrain the time available for socializing, while earnings should be positively associated with sociality, because some kinds of socializing costs money. Weekly hours worked is associated with coworker sociality in the correct direction in models 2 and 3, but the association is tiny. Working an hour more per week is associated with a decrease in coworker sociality per day of .006 minutes. Equivalently, a one standard deviation change in hours worked is associated with a decrease .05 minutes. Earnings are negatively associated with coworker sociality, the opposite direction to predicted. I find, therefore, no evidence that financial resources constrain coworker sociality. The occupational importance of working with people is positively associated with coworker sociality, as predicted, but this association reduced to essentially zero in model 3, once the relational workplace covariates are included in the model.

There is much stronger evidence for the importance of mechanisms that regulate workplace interpersonal relations to workplace sociality. Above I predicted that occupational teamwork and schedule flexibility would be positively and negatively associated with coworker sociality respecitively, because they regulate the extent of coworker contact in the workplace, with coworkers more likely to seek each other out socially if they have pre-existing relationships at work. In model 3, both schedule flexibility and teamwork are associated with coworker sociality in the expected direction, and while the coefficients are small, it is possible that this is a result of the fuzziness of using occupational proxies for workplace processes.

There is a much larger association between coworker sociality and union membership. Above I hypothesized that union status would be positively associated with coworker sociality for two reasons: first, union membership creates tie multiplexity and increases direct interaction, with coworker union members linked by at least two kinds of tie, work and union-membership . Second, union membership promotes homophily by reducing status differentials between workers. Being a member of a union is associated with an increase in coworker sociality of a quarter of a minute per day. This is similar in size to differnece in sociality between several occupational classes, including the gap between professionals and construction, sales, and service workers (model 3).

Discussion

The study has a number of limitations. First, the data is cross-sectional, and so the possibility of omitted variable bias makes it impossible to make strong causal claims.There are plausibly omitted variables at both the level of individuals and their jobs. For individuals, time diaries make it possible to control for both non-work responsibilities and personal propensity towards sociality, but there are perhaps other aspects of personality, such as a respondents' feelings job satisfaction, that I cannot control for. Similarly, aside from unionization, ATUS contains little information about the characteristics of the organizations for which respondents work. It seems likely that aspects of organizational context such as firm size or management quality influence coworker sociality. Similarly, while ATUS allows for an investigation of the characteristics of jobs, occupations, and, to some degree, workplaces in which coworker sociality is higher or lower, it is not possible to use ATUS to examine if the structure of workplace sociality networks differ by across workplaces or occupations, or measure directly the deliberate policies or actions organizations might undertake to deliberately promote or hinder workplace sociality, such as the sponsoring of social events, or the monitoring of work time.

As a partial solution to the lack of organizational detail in The American Time Use Survey (ATUS), I use occupational measures of some work characteristics, and this is a common strategy in the social sciences (Cifuentes et al. 2010, @Zimmerman2004). But using occupational measures smooths intra-occupational variation: it is not clear if the small but significant coeffiecients for schedule flexibility and social orientation at the occupation level reflect a small and consistent assocation across the entire occupation, or much larger association present only in some workplaces. For this reason it is difficult to compare coefficient size across variables measured at the job level (hours, wages, and union status), with variables measured at the level of

Table 2: Work and Occupational Differences in Coworker Sociality

	Dependent variable:		
	Coworker sociality (minutes per day)		
	(1)	(2)	(3)
Female	−0.08* (0.05)	−0.16*** (0.05)	−0.15*** (0.05)
Care work (mins)	−0.003*** (0.0003)	−0.003*** (0.0003)	−0.003*** (0.0003)
Education (ref. = HS diploma)			
...<HS	−0.08 (0.08)	−0.11 (0.08)	−0.09 (0.08)
...GED	0.10 (0.11)	0.09 (0.11)	0.09 (0.11)
...Some college	−0.09* (0.05)	−0.07 (0.05)	−0.07 (0.05)
...Bachelor's degree	−0.33*** (0.06)	−0.28*** (0.07)	−0.27*** (0.07)
Race (ref. = White)			
...Asian	0.01 (0.11)	0.01 (0.11)	0.02 (0.11)
...Black	0.13** (0.06)	0.11* (0.06)	0.10 (0.06)
...Other	−0.14 (0.14)	−0.16 (0.14)	−0.16 (0.15)
Age	−0.04*** (0.01)	−0.03** (0.01)	−0.03*** (0.01)
Age squared	0.0003** (0.0001)	0.0003* (0.0001)	0.0003** (0.0001)
Married	−0.12*** (0.05)	−0.11** (0.05)	−0.11** (0.05)
Hispanic	−0.08 (0.06)	−0.12* (0.06)	−0.11* (0.06)
Children in household (ref. = 0)			
...1	0.0003 (0.06)	0.005 (0.06)	0.003 (0.06)
...2	0.02 (0.07)	0.02 (0.07)	0.02 (0.07)
...3+	0.07 (0.08)	0.07 (0.08)	0.08 (0.09)
General sociality (mins)	0.002*** (0.0003)	0.002*** (0.0003)	0.002*** (0.0003)
Occupational Class (ref. = Professional)			
...Management	−0.50*** (0.09)	−0.46*** (0.09)	−0.40*** (0.10)
...Service	0.35*** (0.08)	0.28*** (0.08)	0.24*** (0.08)
...Sales	−0.27*** (0.10)	−0.31*** (0.10)	−0.23** (0.10)
...Administrative	0.19** (0.07)	0.15** (0.07)	0.13* (0.08)
...Farming	0.48** (0.19)	0.54*** (0.20)	0.48** (0.20)
...Construction	0.35*** (0.08)	0.37*** (0.08)	0.28*** (0.09)
...Production	0.67*** (0.08)	0.70*** (0.08)	0.58*** (0.10)
...Transport	0.37*** (0.09)	0.40*** (0.10)	0.30*** (0.10)
Hours		−0.01** (0.003)	−0.01** (0.003)
Weekly earnings (log)		−0.14*** (0.04)	−0.17*** (0.04)
Social work tasks		0.06** (0.03)	0.004 (0.03)
Union member			0.26*** (0.05)
Team-oriented			0.04* (0.02)
Schedule flexibility			−0.07** (0.03)
Constant	1.30*** (0.30)	2.37*** (0.39)	2.56*** (0.39)
Observations	54,939	54,939	54,939

Note: *p<0.1; **p<0.05; ***p<0.01

occupation (Social work tasks, team-oriented work, and schedule flexibililty). These limitations are, however, an inevitable consequence of the topic studied; there is no American dataset with both detailed time use and workplace data.

This study makes two contributions. A large body of literature has shown the importance of informal social relations for many workplace outcomes, including hiring, wages, performance, and intrafirm mobility. But while some research considers different kinds of informal workplace relations, very little previous research considers informal socializing outside of work (For an exception see Oh, Chung, and Labianca 2014), and none, as far as I know, has looked at informal coworker sociality using nationally representative US data. Yet there are strong theoretical reasons to believe informal sociality outside of work to be a consequential social relation for workplaces and organizations. First, socializing, insofar as it promotes general positive relationships between coworkers, may help to maintain other kinds of informal tie, such as mentoring or informational exchange. Second, because this kind of tie has moved outside the workplace, it may indicate a stronger tie between coworkers than between those who only interact at work. This study provides a simple measure, the amount of time spent socializing outside of work, that could be easily operationalized in future studies, using both ATUS or other datasets.

Second, this study contributes to our understanding of informal social ties in workplaces by showing their variation across insitutional contexts. While a great deal of previous research has shown how informal ties vary by individual dyadic attributes (McDonald 2011; Fernandez and Fernandez-Mateo 2006; McPherson, Smith-Lovin, and Cook 2001), very little work has examined how informal ties in workplaces vary by common aspects of workplace environments, despite research showing the importance of these ties for organizational as well as individual outcomes (Mehra, Kilduff, and Brass 2001; Oh, Chung, and Labianca 2014; Lin 1999). I find differences in levels of sociality by occupational class remainafter controlling for the two most plausible selection mechanisms, outside carework and social propensity. I find, moreover, associations between coworker sociality and the structure of workplace relations: sociality occurs more frequently when workers are unionized together, when they work in teams, and when their schedules are more likely to line up.

The relationship between coworker sociality and both occupational levels of team-based work, and workplace unionization is consistent with two mechansisms linking work to informal workplace relations, multiplexity and organizationally induced homophily, that merit further research on the relationship between organizational complexity and social capital. Previous research has shown both that different kinds of social ties at work serve different purposes (Podolny and Baron 1997) and that one kind of social interaction can lead to another (Ellwardt, Steglich, and Wittek 2012). Equally, workers form social ties based on status homophily (McPherson, Smith-Lovin, and Cook 2001). There are, however, further potential insitutional sources of multiplexity, such as division or entry cohort, and that may lead to higher levels of coworker sociality. There is perhaps even greater variation in worker status differentials by organization. Organizational variation in formal hierarchies produce or limit status differentials, but so do formal and informal rewards and sancations, and the affiliation or lack thereof of workers in alternative organizations, including unions, but also churches, PTAs, and social groups. Insofar as they promote or limit homophily, variations in these groups and hierarchies may be consequential for the formation of workplace social capital.

Given what we know about the consequences of informal social relations for workers, organizations, and status inequalities, insitutional differences in informal social relations between coworkers have at least one of two implications for the consequences of social capital in workplaces. Previous research on the consequences of social capital usually takes as its case the organization. The institutional differences in the distribution of informal social ties, demonstrated above, implies that social relations may function as a mechanism for the production of organizational or occupational differences in hiring, advancement, and performance, amongst other outcomes. In blue collar and service occupations, for example, and in workplaces with greater emphasis on teamwork, or with less schedule flexibility, more hiring may be the result of referrals, a greater proportion of intra-organizational mobility should be the result of social capital advantage, and work groups may perform better. And if workplaces are segregated by status along the same axes as differences in informal social relations (and previous research on gender segregation in blue collar occupations suggests that this is the case (Charles and Grusky 2005)), institutional differences in the latter may exacerbate or moderate the former.

Alternatively or additionally, it is possible that informal social relations work differently in different workplace

contexts. Past research on the contigent value of informal social relations has focused on differences in workers' social networks and the size of work groups (Burt 1992), and on the differing consequences of strong and weak ties (Podolny and Baron 1997). But we do not know if differences in how workplaces are organized and workers are managed change the consequences of informal social relations. It is possible, for example, that in team-based workplaces, managers may prioritize referral hiring because of the positive consquences of social capital for group performance (Fernandez, Castilla, and Moore 2000, @Castilla2005). Conversely, it is possible that informal social ties matter less for hiring, wages, and mobility in more bureaucratic organizations, perhaps via unionization or the formalization of human resource practices. The measure of coworker sociality debuted in this paper may be useful for investigating these questions. The American Time Use Survey itself measures some workplace outcomes, such as wages, while the large sample size of ATUS means it is plausible to construct occupational or industry-based measures of coworker sociality in order to investigate institutional differences in outcomes.

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Appendix

Table A1: Detailed Activites in the Coworker Sociality Measure

Detailed Activity	Proportion of Total Coworker Sociality
Socializing/communicating	0.373
Relaxing, thinking	0.281
Attending or hosting parties/recpetions/ceremonies	0.092
TV/Movies (secular)	0.067
Reading	0.044
Tobacco/drug use	0.041
Playing games	0.024
Attending meetings for personal interest	0.018
Computer use for leisure	0.013
Attending performing arts	0.012
Listening to/playing music	0.01
Arts/entertainment, N.E.C.	0.008
Attending movies	0.006
Gambling	0.004
Arts/crafts	0.003
Waiting associated with arts/entertainment	0.001
Listening to radio	0.001

Only showing activities above a threshold of 0.001

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Table A2: Work and Occupational Differences in Broad Coworker Co-activities

	Dependent variable:		
	Coworker co-activity (minutes per day)		
	(1)	(2)	(3)
Female	−0.03 (0.03)	−0.05* (0.03)	−0.04 (0.03)
Care work (mins)	−0.003*** (0.0002)	−0.004*** (0.0002)	−0.004*** (0.0002)
Education (ref. = HS diploma)			
...<HS	0.01 (0.05)	0.01 (0.05)	0.03 (0.05)
...GED	0.04 (0.07)	0.04 (0.07)	0.04 (0.07)
...Some college	−0.02 (0.03)	−0.02 (0.03)	−0.02 (0.03)
...Bachelor's degree	−0.04 (0.04)	−0.04 (0.04)	−0.04 (0.04)
Race (ref. = White)			
...Asian	−0.17*** (0.04)	−0.17*** (0.04)	−0.18*** (0.04)
...Black	−0.01 (0.05)	−0.02 (0.05)	−0.02 (0.05)
...Other	−0.33*** (0.05)	−0.34*** (0.05)	−0.30*** (0.05)
Age	−0.05 (0.04)	−0.05 (0.04)	−0.05 (0.04)
Age squared	0.30*** (0.11)	0.37*** (0.11)	0.38*** (0.11)
Married	0.28*** (0.04)	0.29*** (0.05)	0.27*** (0.05)
Hispanic	0.20*** (0.05)	0.23*** (0.05)	0.21*** (0.06)
...1	−0.17*** (0.06)	−0.13** (0.06)	−0.16*** (0.06)
...2	0.004 (0.06)	0.01 (0.06)	0.01 (0.06)
...3+	0.02 (0.04)	0.02 (0.04)	0.02 (0.04)
General sociality (mins)	−0.02 (0.08)	−0.02 (0.08)	−0.03 (0.08)
Occupational Class (ref. = Professional)			
...Management	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
...Service	0.0002*** (0.0001)	0.0002*** (0.0001)	0.0002*** (0.0001)
...Sales	0.01 (0.03)	0.01 (0.03)	0.01 (0.03)
...Administrative	0.18*** (0.03)	0.18*** (0.03)	0.18*** (0.03)
...Farming	0.001 (0.03)	0.001 (0.03)	0.0001 (0.03)
...Construction	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)
...Production	0.10** (0.05)	0.10** (0.05)	0.11** (0.05)
...Transport	−0.0004* (0.0002)	−0.0004* (0.0002)	−0.0004* (0.0002)
Hours		−0.003** (0.001)	−0.003* (0.001)
Weekly earnings (log)		0.01 (0.02)	−0.01 (0.02)
Social work tasks		0.03** (0.01)	−0.02 (0.02)
Union member			0.17*** (0.03)
Team-oriented			0.06*** (0.01)
Schedule flexibility			−0.02 (0.02)
Constant	2.68*** (0.18)	2.77*** (0.22)	2.90*** (0.22)
Observations	54,939	54,939	54,939

Note: *p<0.1; **p<0.05; ***p<0.01

Table A3: Work and Occupational Differences in Coworker Sociality, Narrowly Defined

	Dependent variable:		
	Coworker co-activity (minutes per day)		
	(1)	(2)	(3)
Female	−0.14** (0.07)	−0.26*** (0.08)	−0.25*** (0.08)
Care work (mins)	−0.003*** (0.0005)	−0.003*** (0.001)	−0.003*** (0.001)
Education (ref. = HS diploma)			
...<HS	0.04 (0.12)	0.03 (0.13)	0.05 (0.13)
...GED	0.44*** (0.16)	0.43*** (0.17)	0.43*** (0.17)
...Some college	0.16* (0.08)	0.17** (0.08)	0.17** (0.08)
...Bachelor's degree	−0.14 (0.10)	−0.11 (0.10)	−0.10 (0.10)
Race (ref. = White)			
...Asian	−0.49*** (0.13)	−0.43*** (0.14)	−0.38*** (0.15)
...Black	0.12 (0.12)	0.06 (0.12)	0.03 (0.13)
...Other	−0.14 (0.13)	−0.18 (0.14)	−0.10 (0.14)
Age	0.02 (0.11)	−0.01 (0.11)	−0.03 (0.12)
Age squared	0.35 (0.29)	0.62** (0.32)	0.56* (0.32)
Married	0.30** (0.12)	0.36*** (0.13)	0.28** (0.14)
Hispanic	0.50*** (0.12)	0.59*** (0.13)	0.48*** (0.15)
...1	0.27** (0.14)	0.40*** (0.15)	0.30* (0.16)
...2	−0.38** (0.19)	−0.38* (0.20)	−0.36* (0.20)
...3+	0.31*** (0.09)	0.27*** (0.09)	0.26*** (0.09)
General sociality (mins)	−0.23 (0.23)	−0.25 (0.24)	−0.26 (0.24)
Occupational Class (ref. = Professional)			
...Management	−0.06*** (0.02)	−0.06*** (0.02)	−0.06*** (0.02)
...Service	0.001*** (0.0002)	0.001** (0.0002)	0.001** (0.0002)
...Sales	−0.03 (0.07)	−0.03 (0.07)	−0.03 (0.07)
...Administrative	−0.08 (0.10)	−0.12 (0.10)	−0.12 (0.10)
...Farming	0.11 (0.09)	0.12 (0.09)	0.12 (0.09)
...Construction	0.07 (0.10)	0.07 (0.10)	0.08 (0.10)
...Production	0.02 (0.13)	0.03 (0.13)	0.03 (0.13)
...Transport	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
Hours		−0.02*** (0.004)	−0.02*** (0.004)
Weekly earnings (log)		−0.06 (0.06)	−0.09 (0.07)
Social work tasks		0.12*** (0.04)	0.06 (0.05)
Union member			0.22*** (0.08)
Team-oriented			0.04 (0.04)
Schedule flexibility			−0.07 (0.04)
Constant	0.58 (0.46)	1.76*** (0.60)	1.92*** (0.61)
Observations	54,939	54,939	54,939

Note: *p<0.1; **p<0.05; ***p<0.01

Table A4: Work and Occupational Differences in Coworker Sociality, Without Client-oriented Occupations

	Dependent variable:		
	Coworker sociality (minutes per day)		
	(1)	(2)	(3)
Female	−0.14** (0.07)	−0.22*** (0.07)	−0.16** (0.07)
Care work (mins)	−0.003*** (0.0004)	−0.003*** (0.0004)	−0.003*** (0.0004)
Education (ref. = HS diploma)			
...<HS	−0.04 (0.09)	−0.07 (0.09)	−0.04 (0.09)
...GED	0.28** (0.12)	0.26** (0.12)	0.26** (0.12)
...Some college	−0.04 (0.06)	−0.01 (0.06)	−0.01 (0.06)
...Bachelor's degree	−0.25*** (0.09)	−0.19** (0.09)	−0.14 (0.09)
Race (ref. = White)			
...Asian	−0.05 (0.17)	−0.10 (0.17)	−0.12 (0.17)
...Black	0.22*** (0.08)	0.19** (0.08)	0.16** (0.08)
...Other	−0.50** (0.21)	−0.52** (0.21)	−0.53** (0.21)
Age	−0.02 (0.02)	−0.01 (0.02)	−0.02 (0.02)
Age squared	0.0002 (0.0002)	0.0001 (0.0002)	0.0002 (0.0002)
Married	−0.14** (0.06)	−0.12** (0.06)	−0.12** (0.06)
Hispanic	0.05 (0.07)	0.001 (0.07)	0.004 (0.07)
...1	−0.05 (0.08)	−0.05 (0.08)	−0.04 (0.08)
...2	0.10 (0.08)	0.10 (0.08)	0.11 (0.08)
...3+	0.06 (0.10)	0.07 (0.11)	0.09 (0.11)
General sociality (mins)	0.0003 (0.0004)	0.0002 (0.0004)	0.0003 (0.0004)
Occupational Class (ref. = Administrative)			
...Sales	−0.46*** (0.10)	−0.43*** (0.10)	−0.08 (0.11)
...Farming	0.24 (0.19)	0.32 (0.20)	0.43** (0.20)
...Construction	0.12 (0.09)	0.17* (0.09)	0.11 (0.09)
...Production	0.45*** (0.08)	0.48*** (0.09)	0.26*** (0.09)
...Transport	0.15 (0.09)	0.21** (0.10)	0.10 (0.10)
Hours		−0.01*** (0.004)	−0.01*** (0.004)
Weekly earnings (log)		−0.16*** (0.05)	−0.19*** (0.05)
Social work tasks		0.02 (0.04)	−0.04 (0.04)
Union member			0.24*** (0.07)
Team-oriented			0.09*** (0.03)
Schedule flexibility			−0.33*** (0.05)
Constant	0.96** (0.39)	2.37*** (0.49)	2.35*** (0.50)
Observations	24,990	24,990	24,990

Note: *p<0.1; **p<0.05; ***p<0.01

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