Managing Motherhood: How "Queen Bee" Managers in the US Service Sector Reduce Motherhood Advantages in Work Scheduling

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Abstract:
This study advances sociological theories of motherhood-based workplace inequalities by examining how frontline managers shape mothers' access to stable work schedules in the US service sector. Prior research has shown that mothers in the US service sector experience intense conflict between the time demands of motherhood and employers' expectations that employees will be available to work unstable work schedules, yet little work has investigated sources of variation in mothers' exposure to schedule instability. Building on and synthesizing theories of homophily, expectation states theory, and "queen bee" theories of women in management, I propose a model in which managers' own gender and parenthood status structure their responses to their employees' scheduling needs. Female managers who are mothers are theorized to exhibit homophily and produce motherhood scheduling advantages, while female managers without children are expected to penalize mothers. Analyses of survey and experimental data collected from a large national sample of US retail and food service workers support this theoretical synthesis, showing that motherhood advantages in scheduling appear under male managers and female managers who are mothers, but erode under female managers without children. By positioning motherhood—not gender alone—as the status dimension that most directly collides with ideal worker norms, this work highlights an important determinant of when women in management act as agents of change and when they reinforce inequality. More broadly, this study frames managerial discretion as a key mechanism linking status expectations, manager-employee relations, and organizational outcomes, advancing theory on the micro-foundations of workplace inequality.

Introduction

Unstable work schedules are pervasive among low-wage workers in the US service sector. In an effort to reduce labor costs, service sector employers often seek to match staffing levels to real-time demand using scheduling practices that require employees to maintain 24/7 availability to work at a moment's notice and accommodate last-minute changes to their work schedule (Lambert 2008; Kalleberg 2011; Lambert, Fugiel, and Henly 2014; Schneider and Harknett 2019a). Schedule instability and lack of schedule control are particularly disruptive for mothers in the service sector. Mothers often struggle to secure consistent high-quality childcare arrangements and meet other family needs due to uncertainty around the times when they will need childcare and misalignment between the times that mothers work and that formal childcare arrangements are available (Henly and Lambert 2005, 2014; Henly, Shaefer, and Waxman 2006; Carrillo et al. 2017; Harknett, Schneider, and Luhr 2020).

As a result, mothers who may require more flexible and predictable schedules or who may be unavailable to work at certain times often struggle to meet their employers' expectations of the "ideal worker" (Acker 1990; Blair-Loy 2003, 2004). In the US service sector, the ideal worker is expected to maintain open availability to work whenever their employer demands with little or no advance notice (Kalleberg 2011; Luhr 2020). One might expect that incompatibility between the time demands of parenting and just-in-time scheduling would result in a motherhood penalty in work scheduling analogous to the motherhood penalty in wages. But despite the sharp conflict between the scheduling needs of mothers and their employers' ideal-worker expectations, women in the service sector have managed to obtain relatively stable and predictable work schedules compared to men, and some descriptive evidence aggregated across economic sectors suggests that mothers fare better than women without children on some

measures of schedule instability. For example, mothers experience about 15 percent less week-to-week fluctuation in work hours than the overall average for women (Lambert et al. 2014).

While mothers on average secure large scheduling advantages over otherwise similar women without children, they also report tremendous variation in their ability to receive scheduling accommodations from their supervisors (e.g. Henly et al. 2006), suggesting that supervisor support is a key determinant of how and when motherhood scheduling advantages appear in the service sector. To better understand the organizational dynamics that produce motherhood scheduling inequalities within firms, I examine how motherhood scheduling inequalities are produced through interactions between employees and frontline managers, who face intense pressure to maintain labor costs through just-in-time scheduling but also wield considerable discretion over how they distribute schedule instability among their employees.

Drawing on a large body of literature suggesting that female managers play an important role in determining how conflict between ideal worker expectations and gendered stereotypes gets translated into economic inequalities between male and female employees, I synthesize insights from theories of homophily, expectation states theory, and queen bee theory to develop and test a theoretical model of managers' role in producing motherhood inequalities in work scheduling. Consistent with the homophily perspective (Tsui and O'Reilly 1989; Hultin and Szulkin 1999; Cohen and Huffman 2007), I argue that in some cases, female managers may reduce the negative effects of male-typed ideal worker norms on female employees and be more accommodating to women's scheduling needs. However, I also suggest that in the US service sector, motherhood specifically is a status characteristic associated with negative expectations antithetical to ideal worker norms (Ridgeway and Correll 2004). As such, scheduling requests from employees who are mothers may pose a status threat to female managers. I argue that in

response, female managers are likely to exhibit what Staines et al. (1974) termed the "queen bee" phenomenon and be particularly unaccommodating to mothers' scheduling needs in order to emphasize their own stereotypically masculine traits that differentiate them from other women in the workplace (Staines et al. 1974; Kanter 1977; Ellemers 2001; Ellemers et al. 2004; Derks, Van Laar, et al. 2011; Derks, Van Laar, and Ellemers 2016). I further argue that female managers' tendency towards homophily or queen bee behavior hinges on their own parenthood status – mothers are more likely to exhibit homophily towards other mothers while non-mothers will exhibit queen bee behavior – and that female managers with and without children both tend towards homophily when motherhood is not a salient dimension of female employees' scheduling requests.

I investigate how frontline managers' gender and parenthood status shape motherhood scheduling inequalities in the US service sector using a combination of self-reported survey data and results from survey experiments collected from a national sample of 20,987 non-managers and 768 managers from 156 large retail and food service employers via the Shift Project. Using self-reported survey data from the sample of non-managers, I find large motherhood advantages in schedule quality and schedule satisfaction net of individual differences in demographic characteristics, human capital, and patterns of job and firm sorting. Consistent with queen bee theory, I show that this motherhood advantage is strongly and consistently explained by the favorable treatment of mothers by male supervisors and that the motherhood advantage disappears under female supervisors. Results from a vignette experiment show that queen bee behavior is limited to female managers who do not have children. These managers are uniquely unaccommodating to female employees' requests for childcare-related scheduling adjustments and also grant similar requests from male employees at much higher rates. At the same time,

women managers with and without children are much more likely to grant generic vacation requests to women than to men. This evidence supports hypotheses that queen bee behavior among female managers may be motivated by how strongly managers identify with mothers in the workplace and how strongly their work environment may evoke negative stereotypes about women and mothers.

Background

The ideal worker and work time in the US service sector

The US labor market has long been organized around the conception of the "ideal worker" as an employee who is expected to be employed full-time and remain available to work overtime without any significant interference from family obligations. Gender is a constitutive element of the ideal worker, who is expected to embody stereotypically masculine traits such as an unwavering commitment to work, authoritativeness, technical competence, and emotional flatness (Connell 1987; Acker 1990; Williams 2000). Employees who exhibit these traits are rewarded with positive evaluations, pay raises, and promotions, baking gender inequality into firms' organizational structures and cultures (Acker 1990; Ridgeway 1997, 2001; Williams 2000; Smith 2002).

In the US service sector, an important masculine ideal worker norm is the expectation that workers be available to work unstable hours with little advance notice (Blair-Loy 2004; Luhr 2020). Over the last few decades, employers in the service sector have sought to reduce labor costs and minimize their own risk exposure by tightly coupling employee work hours to the real-time demand for labor. Just-in-time scheduling allows employers to flexibly align staffing levels with customer flow on short notice (Lambert 2008; Carré and Tilly 2012). Practices like

assigning employees to different schedules week-to-week, asking employees to leave early or stay late, having employees wait on-call, and cancelling shifts at the last minute shift the costs of uncertain and unstable demand for labor from firms onto employees (Lambert 2008; Kalleberg 2011; Lambert and Henly 2012; Lambert et al. 2014; Schneider and Harknett 2019a). Employers in the service sector often expect their employees to readily accommodate week-to-week or even hour-to-hour fluctuations in their work schedules, and many employers require open availability as a condition for employment (Lambert 2008; Lambert and Henly 2010; Lambert, Haley-Lock, and Henly 2012). By organizing work around the idea that establishments can maximize efficiency by constantly making real-time adjustments to employees' work hours, employers create a demand for workers who are always available to be slotted into shifts at a moment's notice and are willing to tolerate the negative consequences of schedule instability.

Conflicting expectations of mothers in the service sector

Just-in-time scheduling arrangements all but demand that mothers violate gendered expectations about their involvement in family life and their willingness to prioritize work over other obligations (Gerstel and Clawson 2014). With little control over their schedules, mothers in low-wage service sector jobs often struggle to provide childcare themselves or secure reliable formal childcare arrangements, and instead rely on constellations of informal childcare provided by siblings, relatives, friends, or informal childcare providers (Henly and Lambert 2005, 2014; Scott, London, and Hurst 2005; Carrillo et al. 2017; Harknett et al. 2020). Service sector employers appear to expect that mothers will be less willing to tolerate schedule instability and discriminate against mothers when hiring for jobs with irregular or variable schedules (Ishizuka 2021). Mothers thus face the dual threat of experiencing real conflict between the time demands

of just-in-time scheduling and motherhood and being stereotyped as less willing or able to accommodate employers' scheduling demands.

Frontline managers and mothers' work schedules

Supervisor support is a key determinant of mothers' ability to secure family-friendly schedules in the workplace (Blair-Loy and Wharton 2002; Kim and Mullins 2016; Perry-Jenkins and Gerstel 2020), particularly in the service sector where employees have very little control over their work schedules (Henly et al. 2006). Around half of hourly workers' schedules are decided by their employer without their input and another third report that their employer decides their schedule with only some employee input (Lambert et al. 2014; Schneider and Harknett 2019a).

Employer-driven schedule control within establishments is largely enacted by frontline managers. Employers put intense pressure on frontline managers to minimize labor costs by efficiently distributing work hours among their staff. Higher-level managers often provide frontline managers with a predetermined allotment of staffing hours to allocate to their employees over a given time period, calculated based on sales and customer traffic data, and closely monitor establishments' staffing levels as frequently as every hour (Lambert 2008; Lambert and Henly 2010, 2012; Lambert and Haley 2021). Frontline managers then translate their employer's demands for labor cost containment into on-the-ground scheduling practices. While retail and food service firms go to great lengths to ensure that managers use efficient scheduling practices to limit labor costs, many firms allow managers to exercise considerable discretion over how they distribute schedule instability among their employees (Lambert 2008; Carré et al. 2010; Carré and Tilly 2012; Lambert and Henly 2012; Wood 2018; Lambert and Haley 2021).

A motherhood scheduling penalty or premium?

Is there a motherhood work scheduling penalty or premium among US service sector workers? And how might managers wield their discretion over work scheduling to produce scheduling advantages or disadvantages for mothers relative to other employees? Following the previous literature on motherhood penalties in earnings and evaluations (e.g. Budig and England 2001; Correll, Benard, and Paik 2007; England et al. 2016), I evaluate motherhood penalties in work scheduling primarily by comparing outcomes for mothers and women without children. Like previous studies, I also consider differences in outcomes between mothers and men with and without children.

Little empirical attention has been paid to motherhood inequalities in work scheduling, but descriptive evidence across economic sectors in the US suggests that mothers generally work more stable schedules than women without children (Presser 2003; McCrate 2012, 2021; Lambert et al. 2014; Lambert, Henly, and Kim 2019). Supervisors may choose to allocate relatively stable schedules to mothers for a few reasons. First, supervisors may use their discretion to help parents secure desirable work schedules because they are altruistic and understanding of the time demands of parenting (Henly et al. 2006; Bhave, Kramer, and Glomb 2010). Second, managers may face an economic incentive to reduce absenteeism and turnover by allocating stable schedules to mothers, for whom schedule instability creates costly work-family conflict that increases their likelihood of missing shifts and quitting (Choper, Schneider, and Harknett 2022; Luhr, Schneider, and Harknett 2022). Last, mothers themselves may select into workplaces where they can reliably secure stable schedules because they face such high costs of schedule instability. In line with these arguments and with previous empirical findings, I expect

to observe that in the US service sector, employees who are mothers hold a scheduling advantage over female employees without children:

> *H1: Mothers experience better work scheduling outcomes than otherwise similar women without children.*

Female managers and motherhood scheduling premia

Even though frontline managers wield considerable influence over their employees' schedules, there has been little systematic empirical investigation into their effect on motherhood inequalities in work scheduling in the service sector. In what follows, I consider how supervisors manage conflict between mothers' scheduling needs and the time demands of just-in-time scheduling. I focus specifically on how supervisors' willingness to accommodate mothers' schedules varies around one important dimension of their identity within the workplace: the supervisor's gender.

A large body of research suggests that women in the workplace receive greater support from supervisors who are also women. Managers may exhibit *homophily* and favor same-gender employees because doing so enhances their social identity – managers develop a positive self-image by perceiving themselves and their employees as belonging to the same gender category and favorably comparing members of their gender category to non-members (e.g. Tsui and O'Reilly 1989; Tsui, Egan, and O'Reilly 1992; Ensher and Murphy 1997; Goldberg, Riordan, and Schaffer 2010). Under the homophily perspective, managers allocate workplace rewards based on shared identity with their employees. Indeed, empirical evidence suggests that managers favor same-gender employees in hiring, performance evaluations, retention, wages, mentorship, discipline, and workplace bullying (Tsui and O'Reilly 1989; Tsui et al. 1992; Ensher

and Murphy 1997; Elliott and Smith 2004; Gorman 2005; Cohen and Huffman 2007; Roscigno, Lopez, and Hodson 2009; Castilla 2011).

These same homophily-based identity-enhancing processes may also lead female managers to be more willing than male managers to help mothers mitigate work-family conflict (Wallen 2002; Foley et al. 2006). Moreover, homophily may be more likely in the service sector because women have greater access to organizational power. While much of the prior research on how women are penalized for deviating from male-typed ideal worker norms takes place in male-dominated workplaces, about half of employees and first-line managers in retail sales and food service are female (Bureau of Labor Statistics 2023). If female managers exhibit gender homophily when setting work schedules, we should expect that:

H2 (homophily): Motherhood scheduling premia are larger under female managers than under male managers.

But identification with mothers in the workplace may also harm female managers' status. Expectation states theory argues that gender is a salient categorical distinction or "status characteristic" in the workplace around which expectations, beliefs, and stereotypes regarding merit and competence are organized (Berger, Fisek, and Norman 1977; Ridgeway 1997, 2011). Such beliefs generally disadvantage women. While men are stereotypically expected to occupy higher-status positions in organizations and to embody positive traits that correspond to conceptions of the ideal worker, women are often subject to negative stereotypes that are antithetical to ideal-worker expectations (Acker 1990; Williams 2000; Blair-Loy 2003; Chattopadhyay, Tluchowska, and George 2004).

To protect and enhance their status in the face of negative stereotypes surrounding women, female managers may exhibit "queen bee syndrome" (Staines et al. 1974). In

organizations where stereotypically masculine traits are highly valued, female managers may achieve their personal career goals by simultaneously embodying stereotypically masculine behavior and actively depressing other women's status in the organization, thereby asserting themselves as valuable to the organization while distancing themselves from their low-status gender category (Staines et al. 1974; Kanter 1977; Ely 1994; Ibarra 1999; Chattopadhyay et al. 2004; Ellemers et al. 2004; Derks, Van Laar, et al. 2011; Derks et al. 2016). Derks et al. (2016) suggest that queen bee behavior typically manifests in three ways: 1) women leaders presenting themselves in more masculine ways, 2) women leaders distancing themselves from other women in their organization, and 3) women leaders endorsing and perpetuating gender hierarchies that favor men within their organization.

Indeed, there is substantial empirical evidence of queen bee behavior among successful female leaders in organizations that value stereotypically masculine traits. For example, studies across cohorts of academics and research scientists find that later-career female academics describe themselves in more masculine terms (e.g. self-confident, willing to take risks, willing to take initiative, and independent) than early-career academics and tend to have more negative perceptions of their female PhD students' career commitment (Ellemers et al. 2004; Faniko, Ellemers, and Derks 2021). The authors interpret these findings as evidence that successful women in male-dominated work environments may emulate stereotypically male behavior and perpetuate organizational cultures that harm women to distance themselves from other women within their organization. Similar evidence of the queen bee phenomenon has also been observed among Dutch policewomen (Derks, Van Laar, et al. 2011), across sectors in western Switzerland (Faniko, Ellemers, and Derks 2016), and in US law firms (Ely 1994).

While queen bee theory is typically used to study workplace gender inequalities, I argue

that an extension to inequalities based on motherhood is natural. Building on previous work on expectation states theory, Ridgeway and Correll (2004) argue that motherhood itself is a more salient status characteristic than gender when it comes to shaping expectations and evaluations of workplace performance. Conflict between motherhood and ideal-worker expectations leads mothers to be evaluated less favorably and paid less than other women when their motherhood becomes a salient status characteristic (Driskell and Mullen 1990; Wagner and Berger 1997; Ridgeway and Correll 2004; Correll et al. 2007; Ridgeway 2011).

In the US service sector, conflict between ideal worker expectations and gender stereotypes largely revolves around the incompatibility between just-in-time scheduling and the time demands of motherhood that constrain mothers' ability to accommodate schedule instability. Female managers in the service sector may therefore face a threat to their status in the workplace if they are perceived as identifying with mothers, specifically. Some research finds evidence of queen bee behavior by female managers specifically targeted towards mothers and work-family conflict – Blair-Loy and Wharton (2002) find that mothers with female supervisors are much less likely to use family-care and flexibility policies than mothers with male supervisors. Altogether, if female managers exhibit queen bee behavior, we should expect that female managers on average worsen mothers' scheduling outcomes:

> *H3 (queen bee): Motherhood scheduling premia are smaller under female managers than under male managers.*

To bee or not to bee? Individual and collective mobility responses to social identity threat

Ellemers (2001) argues that women's decision to engage in queen bee behavior is highly dependent on their organizational environment. Rather than alternative formulations of queen

bee theory that emphasize female managers' role in perpetuating gender discrimination, Ellemers contends that queen bee behavior is a consequence of, and response to, gender dynamics within organizations. Broadly, she argues that women in organizations where their gender is devalued face a threat to their social identity – the part of their self-image that is derived from the social categories to which they belong (Tajfel and Turner 1979, 1986; Ellemers 2001; Derks, Ellemers, et al. 2011). Facing a social identity threat, where an individual's status is diminished by their association with a marginalized group, women may enhance their own status either through "individual mobility" strategies that distance themselves from other women or by pursuing "collective mobility" strategies to enact social change that elevates the status all women in the organization (Tajfel and Turner 1979; Branscombe et al. 1999; Chattopadhyay et al. 2004). Individuals' choice of strategies depends on how strongly they identify with or feel committed to the marginalized group – high-identifiers tend to pursue social change strategies while low-identifiers pursue individual mobility (Branscombe et al. 1999; Ellemers 2001; Derks, Van Laar, et al. 2011; Derks et al. 2016).

Following this logic, we might reasonably expect to see a cleavage between low- and high-identifying female managers that is strongly tied to managers' own motherhood status. Homophily and queen bee behavior may then be understood as collective and individual mobility strategies, respectively, that female managers can pursue to advance their status within organizations. Female managers who are also mothers may more strongly identify with other mothers in the workplace due to their shared experience as mothers, including challenges reconciling their caregiving obligations with their job's time demands. They may also not be able to conceal their own motherhood status from other employees and thus may face more difficulty distancing themselves from the negative stereotypes ascribed to mothers. Female managers who

are themselves mothers may therefore be more likely to pursue social change via homophily strategies that support other mothers. On the other hand, female managers who are not mothers may not strongly identify with the concerns and experiences of mothers in their workplace and may also be better equipped to accommodate their workplace's just-in-time scheduling practices. Female managers without children may therefore prefer to pursue queen bee strategies that distance themselves from mothers in the workplace by negatively responding to mothers' scheduling needs.

If female managers who are mothers pursue *homophily* strategies when setting employees' work schedules and female managers who are not mothers pursue *queen bee* strategies, we should expect that mothers' scheduling advantages relative to women without children are larger under managers who are mothers than under female managers who are not mothers:

H4: Motherhood scheduling premia are larger under female managers who are mothers than under female managers without children

If mother and non-mother female managers set schedules in response to the gender- and motherhood-specific social identity threat mechanisms outlined above, we should only observe queen bee behavior in response to parenthood-related scheduling conflicts from female employees. While punishing mothers' deviation from ideal-worker norms surrounding scheduling serves to distance female managers from negative stereotypes about their own gender category, exhibiting similar behavior towards male employees would not elevate their own status in the workplace or affect the overall status of women in the workplace. As such, we should expect that while employees who are mothers fare worse under female managers who are not mothers than under female

managers who are mothers, employees who are fathers fare similarly under mother and non-mother female managers:

H5a: Female managers who are not mothers are less likely to make scheduling accommodations for female employees' childcare needs than for male employees.

H5b: Female managers who are mothers make scheduling accommodations for female and male employees' childcare needs at similar rates.

The social identity threat that female managers face when setting employees' work schedules also varies with the extent to which exhibiting in-group favoritism may expose these managers to negative social perceptions. When negative stereotypes about ingroups are made more salient, high-identifying group members are more likely to exhibit in-group favoritism while low-identifiers are more likely to distance themselves from their low-status group (Branscombe et al. 1999; Derks, Van Laar, et al. 2011). In the context of work scheduling, female managers' queen bee behavior may be limited to settings where negative stereotypes about mothers' commitment to work are activated. Previous literature has shown that the activation of negative stereotypes depends on their salience within a social setting (Steele 1997). The salience of stereotypes in the context of manager-employee negotiations in the workplace varies not only with manager and employee gender, but also with the degree to which negative gender stereotypes are relevant to the negotiation or task at hand (Wheeler and Petty 2001). Because motherhood is most explicitly evoked in childcare-related scheduling requests, we may expect that nonmothers' queen bee responses are limited to when employees make scheduling requests related to their childcare needs as opposed to other types of scheduling requests.

H6: Female managers without children exhibit homophily in responding to employee scheduling requests when negative stereotypes around motherhood are

less salient.

Data and Methods

The Shift Project

This study uses data collected by the Shift Project, an ongoing national survey of US retail and food service workers. Respondents were recruited via Facebook ad campaigns that targeted users ages 18 to 64 who were employed by one of 156 large retail and fast-food employers in the US. A more detailed description of the Shift Project dataset can be found in Schneider and Harknett (2019a, 2019b) and in Appendix 1, which also discusses its comparability to large-scale national datasets with probability sampling and its advantages over these "gold standard" datasets.

The first set of analyses use self-reported survey data to examine how non-managers' work scheduling outcomes vary by their parenthood status and their supervisor's gender. The second set of analyses use a vignette experiment to examine how managers' scheduling decisions vary by their own parenthood status, their employee's gender, and if their employee requests scheduling accommodations for childcare or vacation.

Defining a motherhood penalty or premium

An analysis of motherhood penalties or premia requires defining the effect of motherhood relative to *what*. The most common approach in the motherhood penalty literature is to compare outcomes for mothers and women without children, adjusted for potential confounders (e.g. Budig and England 2001; Correll et al. 2007; Budig and Hodges 2010; England et al. 2016). Many foundational papers in the motherhood penalty literature also make secondary comparisons between mothers' outcomes and those of fathers and men without children. I follow

this convention in the following analyses. I am primarily concerned with managers' role in moderating the effect of motherhood on work scheduling outcomes among women, though I will also discuss how mothers' scheduling outcomes compare to those of fathers and men without children.

Survey study of non-managers

I test Hypotheses 1-3 using survey data collected from a sample of 20,987 respondents who self-identify as non-managers and have non-missing data on analytic variables. These analyses examine how five work scheduling outcomes vary with *parenthood status* (mother, woman without kids, father, man without kids), *supervisor gender* (male, female), and their interaction.

The first three outcomes capture three dimensions of work schedule quality obtained via principal-components factor analysis of 8 indicators of schedule instability. Each factor is a continuous variable standardized to a mean of 0 and standard deviation of 1. This approach follows Lambert and Fugiel's (2023) recommendation to develop and implement multidimensional and congeneric composite measures of schedule quality. The first factor is *timing instability*, and it is largely determined by respondents' exposure to on-call shifts, last-minute shift cancellations and adjustments to start and end times, receiving less than two weeks' notice of their schedule, and week-to-week variation in total hours worked. The second factor is *irregular shifts*. Respondents with higher scores on this factor tend to work a variable or rotating schedule (rather than a regular day, evening, or night shift), work clopening shifts (a night shift followed by a morning shift), have little control over their schedule, but also tend to have more advance notice of their schedule. The third factor represents *employer control* and describes schedules with little employee input, little advance notice, and low variation in weekly hours.

The fourth outcome is a *work-family conflict scale* and the fifth outcome is a Likert measure of respondents' self-reported *schedule satisfaction*. The construction of the outcome variables is discussed in greater detail in Appendix 1.

The ordinary least squares regression models are specified as follows:

$$Y_i = \beta_0 + \beta_1(\text{parenthood})_i + \beta_2(\text{supervisor gender})_i + \beta_3(\text{parenthood X supervisor gender})_i + X_i\gamma + \epsilon_i \quad (1)$$

where Y_i represents one of the five outcomes and X_i represents a vector of covariates. All analyses control for age. Controls for other individual characteristics (race, education, school enrollment status, and marital and cohabitation status), job characteristics (usual weekly hours, job tenure, hourly wage, occupation (e.g. cashier, cook, pharmacist), and subsector (e.g. retail, food services, hospitality), and firm fixed effects are introduced sequentially.

Vignette experiment study of managers

I use a vignette experiment to examine how managers' own parenthood status shapes how they affect motherhood inequalities in work scheduling in settings that evoke negative expectations about motherhood and settings that do not (Hypotheses 4-6). Because the term "manager" is used inconsistently in retail and food service and can reflect a wide range of authority and work tasks, I limit the sample to managers whose direct supervisor works offsite to ensure that I am using responses from managers who have significant authority over how work is carried out at their establishment. I drop respondents who did not respond to the vignette or who have missing data on own gender, parenthood status, age, or employer. The final analytical sample contains 768 managers.

In this study, managers were asked to respond to a vignette experiment where a worker requests a last-minute schedule change:

> [EMPLOYEE NAME] has worked for you at [EMPLOYER NAME] for [TENURE]. They have requested you change their shift tomorrow because [REASON]. How do you respond?

Worker identities are randomized by gender (male and female) and race (Black and White) using typically-middle-class first and last names with high congruence, meaning that experimental subjects are very likely to perceive the name as representing a middle-class person of the intended demographic characteristics (Gaddis 2017). REASON is randomized: the worker either requests to change their shift to take a vacation day or to accommodate their childcare falling through. The childcare condition is meant to evoke a salient conflict between the negative status beliefs surrounding motherhood and ideal worker norms in the US service sector. The vacation condition is meant to evoke a status-neutral conflict with ideal worker norms. I measure how managers' responses to the vignette vary by managers' own *parenthood status* (mother, woman without kids, father, man without kids), *vignette worker gender* (male or female) and the *reason* for the vignette worker's schedule conflict (vacation and childcare conflict).

I consider two measures of the motherhood scheduling premium. First, I evaluate how managers respond differently to female employees' requests for a day off due to childcare falling through versus requests for a vacation day. The difference in managers' responses to the childcare and vacation conditions for female employees is meant to capture the unique premium or penalty that managers afford female employees when scheduling conflicts arise due to the time demands of motherhood, specifically. I use this measure of the motherhood scheduling premium to test Hypothesis 4:

$$\textit{Motherhood premium (H4)} = Pr(\textit{permit change}|\textit{reason=childcare, employee=female}) - Pr(\textit{permit change}|\textit{reason=vacation, employee=female}) \quad (2)$$

To test Hypothesis 5, I examine how managers respond differently to childcare-related scheduling requests from male and female employees:

$$\textit{Motherhood premium (H5)} = Pr(\textit{permit change}|\textit{reason=childcare, employee=male}) - Pr(\textit{permit change}|\textit{reason=childcare, employee=female}) \quad (3)$$

I test Hypothesis 6 by comparing managers' responses to vacation day requests from male and female employees:

$$\textit{Motherhood premium (H6)} = Pr(\textit{permit change}|\textit{reason=vacation, employee=male}) - Pr(\textit{permit change}|\textit{reason=vacation, employee=female}) \quad (4)$$

Results presented in the main analyses reflect differences in raw proportions. Regression adjusted analyses are presented in Appendix 2.

Internal validity in the experiment is high because treatment is randomly assigned. Estimated treatment effects are not biased by unobserved affinities or aversions between managers and employees or selection into specific types of manager-employee relations. I implement two survey design elements to improve external validity. First, the vignette is explicitly situated in the respondent's workplace. Second, the vignette comes at the end of a battery of questions about managers' role at their establishment and their managerial practices, with the goal of priming managers to think about their real-life work establishment when responding to the vignettes.

Results

Descriptive statistics

The analytical sample of non-managers contains data from 20,987 survey respondents who self-identify as non-managers. Descriptive statistics are presented in Table 1. This sample is predominantly non-Hispanic White (81 percent) and female (74 percent). This sample is similar in racial composition to national averages in retail sales (77.6 percent White) food service (73.4 percent White), but it skews more female than the national average in these industries (49.2 percent and 53.9 percent, respectively) (Bureau of Labor Statistics 2023). About half of the women in the sample are mothers and one-third of the men are fathers. Most of the respondents are between 18 and 40 years old and the majority hold at least some college education. Almost all the sample works less than 40 hours per week for an average wage of $11.73 per hour. Just over half of the sample has a direct supervisor who is female.

Table 2 contains descriptive statistics for the outcome variables and the individual components of the scale variables. The three continuous measures of schedule quality are centered at zero with a standard deviation of 1. Together, these factors explain just over half of the variance in the schedule instability indicators. Schedule instability is common for workers in this sample. In the month prior to being surveyed, about 22 percent of respondents worked an on-call shift, 43 percent worked a clopening shift, two-thirds of respondents experienced changes to the timing of a scheduled shift, and 15 percent had a shift cancelled altogether. One-third of respondents receive their work schedule with less than two weeks' notice. Only about one-quarter of respondents work a regular daytime shift. In the month prior to being surveyed, the average difference in respondents' maximum and minimum weekly hours worked was 12.5 hours. The work-family conflict scale is centered at zero with a standard deviation of 0.8 and a Cronbach's alpha of 0.81. The components of the work-family conflict scale are also described in Table 2 and indicate that a substantial proportion of respondents report having difficulty

getting time off and caregiving, and many report that their schedule causes stress at home and is not flexible enough to handle family matters. About 80 percent of respondents indicate they are either "somewhat" or "very" satisfied with their work schedule.

Regressions of non-managers' scheduling outcomes on parenthood status

Table 3 contains results from regressions of non-managers' work scheduling outcomes on own parenthood status. There are four models for each outcome where controls are sequentially added for age, other demographics and human capital, job characteristics, and firm fixed effects. Predicted scheduling outcomes from fully adjusted models are presented in Figure 1. Mothers are the base category for the parenthood status variable. Of primary interest is the coefficient on "women without kids", which reflects the difference in scheduling outcomes between mothers and women without children, net of controls. This coefficient corresponds to the standard definition of a motherhood penalty and is used to test Hypotheses 1-3.

Consistent with the motherhood advantage in work scheduling (Hypothesis 1), after adjusting for all controls, mothers score 0.0375 SD lower on the timing instability scale, 0.0755 SD lower on shift irregularity, and 0.0578 SD lower on employer control than women without children. On average, mothers' face less exposure to last-minute adjustments to the timing of their shifts, day-to-day variation in the times that they work, and have greater input into their work schedules than otherwise similar women without children. Mothers also report higher 0.0569 points higher on the 4-point schedule satisfaction scale than women without children and do not report higher work-family conflict than women without children. Altogether, these results indicate a small but significant motherhood advantage in work scheduling. This parenthood

advantage does not extend to men. Fathers fare the same or worse than mothers, women without children, and men without children on each outcome.

Comparing coefficients across models, motherhood penalties in models of timing instability and employer control that only adjust for age become premia after adding controls for job and employer characteristics, indicating that mothers tend to sort into jobs with more frequent last-minute changes in shift timing and less schedule control than women without children. Motherhood advantages in age-adjusted models of shift irregularity and schedule satisfaction shrink after controlling for demographic, job, and employer characteristics, suggesting that mothers select into jobs where their shifts are more predictable. Within the same jobs at the same employer, mothers have higher quality schedules than women without children.

The effect of supervisor gender on mothers' work schedules

Table 4 presents results from regressions of work scheduling outcomes on employees' parenthood status, supervisor gender, and their interaction. The main effect of parenthood status reflects differences in average scheduling outcomes under male managers between mothers and women without children, fathers, and men without children, net of controls. The coefficient on supervisor gender represents the effect of female managers on mothers' scheduling outcomes. The coefficient on the interaction between parenthood status and supervisor gender describes differences between the effect of female managers on mothers and the effect of female managers on non-mothers. Figure 2 depicts predicted scheduling outcomes from fully adjusted models for mothers and for women without children to visualize how the motherhood scheduling advantage differs under male and female managers.

Do female managers amplify or reduce the motherhood advantage in work scheduling? Hypothesis 2 predicts that motherhood scheduling advantages are larger under female managers than under male managers (homophily) while Hypothesis 3 predicts that female managers shrink motherhood scheduling advantages (queen bee). These hypotheses are tested by examining the coefficients on the interaction between "women without kids" and supervisor gender, which describe differences between the effect of female managers on scheduling outcomes for mothers and for women without children. Contradicting theories of homophily and consistent with queen bee theory, motherhood advantages in timing instability ($p<0.10$), shift irregularity, work-family conflict, and schedule satisfaction all shrink under female managers by 0.05 to 0.10 SD. Predicted scheduling outcomes in Figure 2 make it clear that reduced motherhood scheduling advantages under female managers are driven by their disproportionately negative effect on mothers' schedules. While women without children experience no difference in average scheduling outcomes under male or female managers, mothers experience significantly worse outcomes under female managers than male managers, leading to a reduction in the motherhood scheduling advantage. Outcomes for fathers do not change significantly, consistent with the expectation that queen bee behavior should only affect scheduling outcomes for female employees.

It is possible that motherhood scheduling advantages and the moderating effects of female managers differ between groups of mothers who face different constraints on their ability to handle last-minute schedule adjustments. However, results reported and discussed in Appendix 3 suggest that the associations reported in the main analyses do not differ meaningfully between mothers with younger versus older children or single versus cohabiting mothers.

Vignette experiment: managers' responses to requests for schedule adjustments

Next, I examine data collected from managers in the retail and food service sector who responded to a vignette experiment where they were asked to respond to an employee's request for a last-minute adjustment to their schedule to either take a vacation day or to accommodate a childcare conflict. The vignette experiment is used to check the robustness of the patterns found in the prior analysis of non-manager survey respondents, and it also allows us to observe variation in managers' behavior by their own parental status to see if there are differences in the behavior of managers who are mothers and who do not have children, as predicted by queen bee theories.

Descriptive statistics for the manager sample are presented in Table 5. This sample is a somewhat higher proportion White (84.2 percent) than the national average for first-line supervisors in food service (75.6 percent) and retail sales (78.6 percent), and it skews more female (69.9 percent) than those industries (53.5 percent and 44.6 percent, respectively) (Bureau of Labor Statistics 2023). Compared to the sample of nonmanagers, managers are more likely to be white and male. Managers also tend to be older, are more likely to be married and cohabiting, and are more likely to have children. Education beyond high school is more common for managers. Managers also tend to work more hours for higher wages compared to nonmanagers.

Table 6 and Figure 3 present the proportion of managers who permit female employees in the vignette to change their schedule by manager parenthood status and reason for requesting a schedule adjustment. Differences in permission rates for female employees under the childcare and vacation conditions are meant to reflect a motherhood premium or penalty in work scheduling. Hypothesis 4 predicts that this motherhood scheduling premium will shrink under

female managers without children. I find strong evidence in favor of this hypothesis. Managers who are mothers, fathers, or men without children are between 22 and 35 percentage points more likely to grant scheduling accommodations to female employees experiencing a childcare conflict than to female employees requesting a vacation day. This motherhood premium disappears under female managers without children, who grant female employees' scheduling requests at similar rates regardless of the reason for the request. Consistent with queen bee theories, this reduction in the motherhood scheduling premium is driven by female managers without children's particularly low likelihood of granting childcare-related scheduling requests to female employees. Female managers without children grant such scheduling requests at rates 16 percentage points lower than managers who are mothers, 18 percentage points lower than managers who are fathers, and 4 percentage points lower than men without children.

Table 7 and Figure 4 compare the proportions of managers who granted scheduling requests to female and male vignette employees for each type of scheduling request. Hypotheses 5a and 5b focus on the childcare condition. I predict that female managers without children will be less accommodating of mothers' childcare-related scheduling requests than fathers' requests, while managers who are mothers will be equally accommodating of mothers' and fathers' childcare-related scheduling requests. Consistent with Hypothesis 5a, managers who are women without children are about 17 percentage points less likely to grant childcare-related scheduling accommodations to female employees than they are to grant the same requests to male employees. In line with Hypothesis 5b, managers who are mothers, as well as managers who are fathers or men without children, all grant childcare-related scheduling accommodations to female and male employees at similar rates. Results from tests of Hypotheses 4 and 5a-b provide strong evidence that female managers without children engage in queen bee behavior when setting

employees' schedules through their uniquely and disproportionately harsh responses to female employees' childcare-related scheduling requests.

Finally, because queen bee behavior in scheduling is predicted to be a response to status threats associated with motherhood, Hypothesis 6 predicts that female managers with and without children will both favor female employees' requests for vacation days over those from male employees. Managers who are mothers and women without children respond nearly identically to female and male employees' requests for vacation days (Table 7, Figure 4). Mothers are 18.2 percentage points more likely to grant female employees' requests for a vacation day than male employees' requests, while women without children favor female employees by 17.7 percentage points. These results are consistent with the notion that without facing a status threat from motherhood, mothers and women without children will both exhibit homophily when setting schedules.

Conclusions

Working mothers often struggle to balance the competing time demands of work and family. In the US service sector, schedule instability poses a significant challenge to mothers' ability to care for their children or secure high-quality alternative childcare arrangements. While much research on mothers working low-wage service sector jobs examines the negative consequences of schedule instability, little work systematically investigates the factors that influence mothers' ability to secure desirable work schedules. Unlike gender and motherhood penalties in wages and earnings, motherhood inequalities in work scheduling are not explained by human capital or labor market experience. Rather, mothers tend to sort into occupations and firms that offer mothers large scheduling advantages over otherwise similar women without children working

the same jobs in the same firms**.** This study examines the role of frontline managers in producing such within-job motherhood scheduling advantages.

This work bridges on three strands of research on the social psychological, relational, and organizational foundations of gender and motherhood inequalities to advance sociological theorizing of gendered inequalities at work. I broker insights on female managers' role in producing gender and motherhood inequalities at work from theories of homophily (Tsui and O'Reilly 1989; Tsui et al. 1992; Gorman 2005), expectation states theory (Ridgeway and Correll 2004; Correll et al. 2007; Benard and Correll 2010), and queen bee theory (Staines et al. 1974; Ellemers 2001; Ellemers et al. 2004; Derks, Ellemers, et al. 2011; Derks, Van Laar, et al. 2011), to develop new theoretical insight into how, when, and why female managers may produce motherhood-specific scheduling penalties in the workplace. I argue that motherhood is a salient status characteristic that organizes differentiation among female managers and their female employees. Because motherhood evokes status beliefs that are more directly in conflict with ideal worker norms than gender on its own (Ridgeway and Correll 2004), I argue that managers who are women without children will pursue individual mobility strategies to distance themselves from mothers and thereby produce substantial motherhood penalties among their employees while managers who are mothers will pursue collective mobility strategies that elevate the status of mothers and reduce motherhood penalties.

Through analyses of motherhood penalties in work scheduling using survey data and experimental vignettes, I find consistent and compelling evidence supporting this synthesis of homophily, expectation states, and queen bee theories. I observe significant motherhood advantages in scheduling across measures of schedule quality and schedule satisfaction. I show that these advantages are only observed under male managers, who comprise roughly half of

frontline managers in the service sector, and fully disappear under female managers. The absence of a motherhood advantage under female managers is largely driven by "queen bee" female managers without children who harshly penalize mothers seeking scheduling accommodations, while female managers who are mothers and male managers produce large motherhood scheduling advantages. Male managers without children also exhibit a smaller motherhood scheduling premium than fathers and are less likely to accommodate women's childcare-related scheduling requests, perhaps suggesting that men without children and fathers also pursue individual and collective mobility strategies in response to status threats from parenthood, albeit more weakly than women.

In further support of the social identity threat model of female managers' behavior, vignette experiments demonstrate that queen bee responses to status threats from employees' scheduling requests are limited to requests from female employees that elicit negative status expectations surrounding motherhood. All managers grant fathers' childcare-related scheduling requests at similarly high rates and both mother and nonmother female managers exhibit homophily in work scheduling situations that are not related to childcare.

Taking to heart Reskin's (2003) call to investigate the social mechanisms at the psychological, interpersonal, and organizational levels that link status to inequality, this study demonstrates that whether women in management act as "agents of change" or "cogs in the machine" (Cohen and Huffman 2007) hinges on how employees' scheduling requests activate negative status beliefs, the extent to which managers may be able to distance themselves from the negatively stereotyped group, the demographic composition of manager-employee dyads, and sorting between firms. Practically, these analyses combine to demonstrate that while mothers in the service sector are on average able to secure relatively stable schedules, this advantage is not

stable across or within firms. Rather, mothers' chances of securing stable schedules depend on matching with an understanding and accommodating manager. While managers vary in their willingness to accommodate mothers' scheduling needs, mothers are more likely to receive scheduling accommodations from the majority of service sector managers who are either men or mothers themselves.

This study also demonstrates the utility of pairing experimental and self-reported survey data to study hard-to-observe social processes. Analyses of survey data demonstrate whether aggregate patterns of inequality by gender and parenthood status are consistent with different theories of women in management, but observed associations between motherhood, manager gender, and work schedules may be driven by unobservable differences between workers or by nonrandom selection of some mothers into and out of service sector work based on their tolerance of or ability to avoid schedule instability. Through the experimental vignettes, I can test mechanisms underlying queen bee behavior while also producing causal estimates of these effects by systematically manipulating the extent to which negotiations over employee work schedules present threats to managers' social identity and observing how managers' behavior varies accordingly. However, this strategy is not without limitations. Managers may respond to survey experiments differently from how they would handle their real employees' work schedules. Some of this concern is alleviated by situating the experimental vignettes in the respondent's establishment, rather than in a hypothetical workplace. Due to the sample's relatively high proportion of female respondents and somewhat higher proportion of White respondents, results from these analyses may differ somewhat from population-level associations.

While this study focuses on the social psychological and relational determinants of motherhood advantages in work scheduling, managers' scheduling decisions are also shaped by organizational, structural, and institutional forces. Firms and local governments have successfully reduced schedule instability by adopting policies or passing legislation that guarantees employees advance notice of their schedule, requires employees to be compensated for last-minute shift changes or cancellations, and limits the use of on-call scheduling. These reforms can reduce the intense cost of schedule instability for parents, as can work-family policies that promote employee-driven schedule flexibility.

Future research may be interested in further investigating the organizational characteristics that influence queen bee behavior. Is queen bee behavior less prevalent in establishments or firms with more women? What about in firms that assign more predictable schedules or allow employees to have greater control over their work hours? Future analyses may also consider the career and mobility consequences of queen bee behavior. Mothers may be more likely to leave service sector jobs if they have an unaccommodating female manager. Such mobility may drive changes in wages, job quality, and labor force participation. It is also possible that mothers trade off between schedule stability and other benefits such as wages, hours, or promotions. Future work may be interested in evaluating mothers' work schedules through a compensating differentials framework.

Data Availability Statement

For information regarding additional results and copies of the computer programs used to generate the results presented in the article, please address correspondence to the corresponding author.

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Tables

Table 1. Descriptive statistics for non-manager sample

Variable	% or mean
Race	
White Non-Hispanic	81.3
Black Non-Hispanic	3.68
Hispanic	11.34
Multi/Other	3.68
Female	74.2
Parental status	
Woman without kids	36.54
Mother	37.66
Man without kids	17.53
Father	8.27
Age	
18-19 years old	14.35
20-29 years old	31.44
30-39 years old	13.03
40-49 years old	12.88
50-59 years old	19.15
60+ years old	9.15
Education	
No degree or diploma earned	5.56
High school diploma/GED	35.47
Some college or more	58.97
Enrolled in school	27.43
Cohabitation status	
Married, living with spouse	28.04
Living with a partner	18.48
Not living with a spouse or partner	53.49
Usual hours per week	
0 to 10	3.85
10 to 20	19.75
20 to 30	27.13
30 to 40	44.1
40 or more	5.18
Hourly wage ($)	11.73
Tenure	
Less than 1 year	20.97
1 year	15.11
2 years	15.13
3 years	10.65
4 years	6.14
5 years	5.23
6 or more years	26.76
Supervisor gender	
Male	44.6
Female	55.4
n	20987

Table 2. Descriptive statistics of outcome variables and their components

Outcome variables	mean	sd	proportion of variance	
Schedule instability factors				
Timing instability	0	1	0.21	
Shift irregularity	0	1	0.19	
Employer control	0	1	0.13	
	mean	sd	alpha	
Work family conflict scale	0	0.8	0.81	
	%			
Satisfied with schedule				
Not at all satisfied	6.25			
Not too satisfied	14.44			
Somewhat satisfied	45.25			
Very satisfied	34.06			
Scale components				
Schedule instability components	% or mean	Work-family conflict components	%	
On-call	22.23	Easy to get time off		
Cancelled shift	15.4	Strongly Disagree	7.47	
Timing change	65.71	Disagree	16.8	
Clopening	42.53	Agree	47.22	
Less than 2 week notice	32.24	Strongly Agree	28.51	
Schedule control		Family-friendly schedule flexibility		
Decided by employer	55.45	Never true	11.22	
Decided by employer with employee input	35.14	Sometimes true	36.68	
Decided by employee	9.41	Often true	30.15	
Schedule type		Always true	21.96	
Variable Schedule	35.72	Shift causes family stress		
Regular Daytime schedule	26.5	Always true	10.66	
Regular Evening Schedule	8.31	Often true	14.89	
Regular Night Shift	7.68	Sometimes true	39.74	
Rotating Schedule	17.26	Never true	34.71	
Other	4.53	Difficult to caregive		
Hour variation	12.46	Always true	7.45	
		Often true	11.37	
		Sometimes true	27.75	
		Never true	53.43	

Table 3. Regressions of scheduling outcomes on parenthood status

	Timing instability				Shift irregularity			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother)								
Woman without kids	-0.0600**	-0.0676***	-0.0189	0.0375*	0.215***	0.147***	0.106***	0.0755***
Father	-0.118***	-0.0929***	-0.0185	0.00872	-0.0487+	-0.0600*	0.0116	0.0351
Man without kids	-0.125***	-0.137***	-0.0383+	0.0357+	0.106***	0.0523*	0.0648**	0.0537*
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Employer control				Work-family conflict			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother)								
Woman without kids	-0.0598**	0.00683	0.0242	0.0578**	-0.0187	-0.00557	-0.0148	-0.0116
Father	0.0730**	0.0861**	0.0747**	0.0701*	0.0897***	0.0863***	0.0483*	0.0467*
Man without kids	-0.0871***	-0.0442+	-0.0400+	-0.00656	-0.0151	-0.000700	-0.0339+	-0.0276
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Schedule satisfaction							
	(1)	(2)	(3)	(4)				
Parenthood status (base=mother)								
Woman without kids	-0.0871***	-0.0725***	-0.0608***	-0.0569**				
Father	-0.0685**	-0.0710**	-0.0878***	-0.0866***				
Man without kids	-0.0919***	-0.0777***	-0.0817***	-0.0856***				
Age	Yes	Yes	Yes	Yes				
Demographics and human capital	No	Yes	Yes	Yes				
Work characteristics	No	No	Yes	Yes				
Firm fixed effects	No	No	No	Yes				

Note: N=20,987; +p<0.10 *p<0.05 **p<0.01 ***p<0.001. Demographics and human capital include race, education, enrollment status, and marital status. Work characteristics include usual hours, tenure, hourly wage, occupation, and subsector.

Table 4. Regressions of scheduling outcomes on parenthood status by supervisor gender

	Timing instability				Shift irregularity			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother)								
Woman without kids	-0.0291	-0.0348	0.000329	0.0673**	0.236***	0.170***	0.149***	0.122***
Father	-0.0859**	-0.0597+	-0.00149	0.0145	0.0483	0.0380	0.0628+	0.0864**
Man without kids	-0.0645*	-0.0718*	0.0218	0.0721**	0.186***	0.132***	0.113***	0.0975***
Supervisor gender								
Female	0.128***	0.126***	0.0775***	0.0484*	0.174***	0.177***	0.112***	0.117***
Parenthood X supervisor gender								
Woman without kids X female	-0.0555+	-0.0580+	-0.0349	-0.0514+	-0.0423	-0.0442	-0.0735*	-0.0800**
Father X female	0.000196	-0.00618	-0.00522	0.0107	-0.162**	-0.163**	-0.0896+	-0.0946+
Man without kids X female	-0.0932*	-0.103**	-0.115**	-0.0704*	-0.120**	-0.117**	-0.0791*	-0.0730*
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes

	Employer control				Work-family conflict			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother)								
Woman without kids	-0.0445	0.0163	0.0310	0.0677*	0.0303	0.0394+	0.0326	0.0403+
Father	0.0759*	0.0872**	0.0787*	0.0700*	0.124***	0.120***	0.0747**	0.0641*
Man without kids	-0.0873**	-0.0478	-0.0413	-0.0114	0.0331	0.0455+	0.0108	0.0160
Supervisor gender								
Female	0.0263	0.0231	0.0405+	0.0448*	0.0694***	0.0689***	0.0831***	0.0693***
Parenthood X supervisor gender								
Woman without kids X female	-0.0253	-0.0155	-0.0116	-0.0163	-0.0831**	-0.0767**	-0.0808**	-0.0884***
Father X female	0.0113	0.0137	0.00473	0.0135	-0.0498	-0.0506	-0.0298	-0.0109
Man without kids X female	0.0101	0.0170	0.0123	0.0178	-0.0874**	-0.0827**	-0.0795*	-0.0811**
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes

	Schedule satisfaction			
	(1)	(2)	(3)	(4)
Parenthood status (base=mother)				
Woman without kids	-0.110***	-0.0938***	-0.0852***	-0.0889***
Father	-0.106***	-0.110***	-0.108***	-0.1000***
Man without kids	-0.143***	-0.128***	-0.118***	-0.123***
Supervisor gender				
Female	-0.0859***	-0.0861***	-0.0617**	-0.0500*
Parenthood X supervisor gender				
Woman without kids X female	0.0418	0.0385	0.0423	0.0550*
Father X female	0.0498	0.0542	0.0235	0.00966
Man without kids X female	0.0862*	0.0832*	0.0655+	0.0712*
Age	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes

Note: N=20,987; +p<0.10 *p<0.05 **p<0.01 ***p<0.001. Demographics and human capital include race, education, enrollment status, and marital status. Work characteristics include usual hours, tenure, hourly wage, occupation, and subsector.

Table 5. Descriptive statistics for manager sample

Variable	% or mean
Race	
White Non-Hispanic	84.23
Black Non-Hispanic	2.56
Hispanic	9.7
Multi/Other	3.5
Female	69.92
Parental status	
Woman without kids	27.99
Mother	41.93
Man without kids	16.93
Father	13.15
Age	
18-19 years old	5.34
20-29 years old	29.56
30-39 years old	22.01
40-49 years old	17.71
50-59 years old	19.27
60+ years old	6.12
Education	
No degree or diploma earned	4.69
High school diploma/GED	31.51
Some college or more	63.8
Enrolled in school	11.46
Cohabitation status	
Married, living with spouse	39.32
Living with a partner	21.48
Not living with a spouse or partner	39.19
Usual hours per week	
0 to 10	1.3
10 to 20	4.95
20 to 30	27.6
30 to 40	66.15
40 or more	
Hourly wage ($)	14.20
Tenure	
Less than 1 year	6.77
1 year	7.55
2 years	12.11
3 years	11.2
4 years	7.29
5 years	8.72
6 or more years	46.35
n	768

Table 6. Proportion of managers granting permission to change schedule, female employees

Employee gender	Female		
Experimental condition	Childcare	Vacation	Difference
Manager parenthood status			
Mother	0.944	0.720	0.224***
Woman without kids	0.786	0.754	0.032
Father	0.967	0.615	0.352**
Man without kids	0.824	0.594	0.230*

N=768; +p<0.10 *p<0.05 **p<0.01 ***p<0.001

Table 7. Proportion of managers granting permission to change schedule by condition

Experimental condition	Childcare			Vacation		
Employee gender	Female	Male	Difference	Female	Male	Difference
Manager parenthood status						
Mother	0.944	0.946	-0.002	0.720	0.538	0.182*
Woman without kids	0.786	0.957	-0.171*	0.754	0.577	0.177*
Father	0.967	0.842	0.125	0.731	0.876	-0.145
Man without kids	0.824	0.914	-0.09	0.594	0.862	-0.268*

N=768; +p<0.10 *p<0.05 **p<0.01 ***p<0.001

Figure 1.

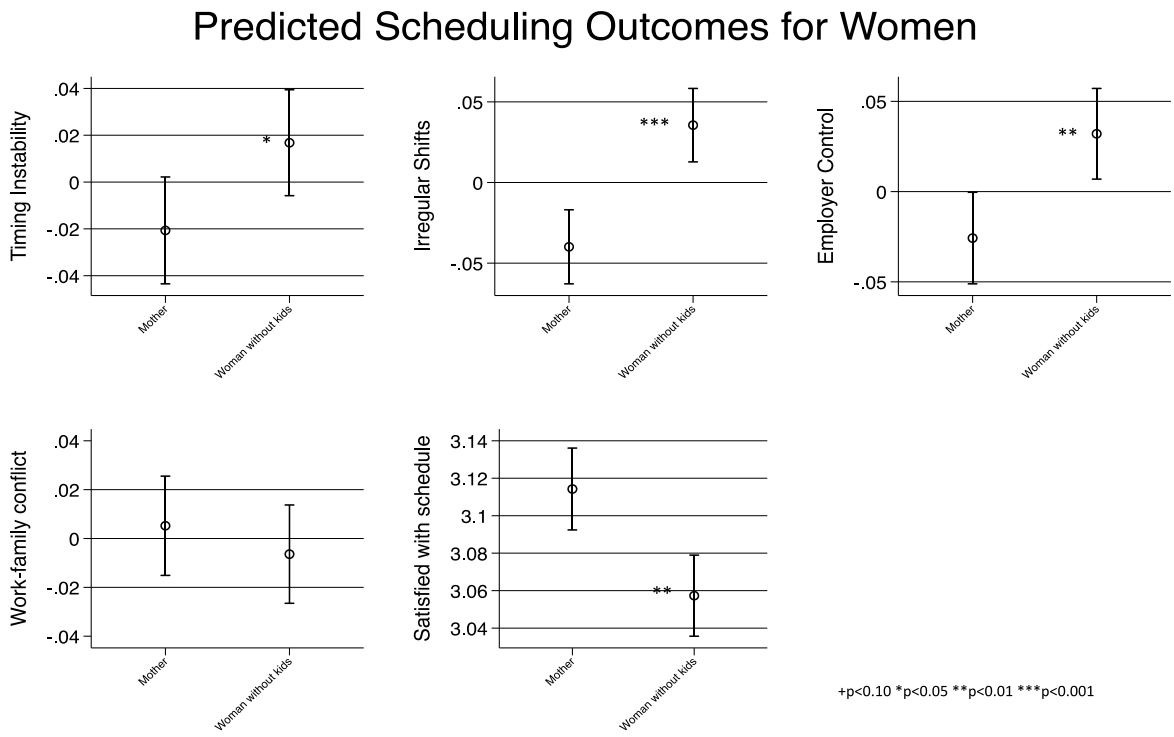

Predicted Scheduling Outcomes for Women
Timing Instability
.04
.02
0
-.02
-.04
*
Mother
Woman without kids
Irregular Shifts
.05
0
-.05
***
Mother
Woman without kids
Employer Control
.05
0
-.05
**
Mother
Woman without kids
Work-family conflict
.04
.02
0
-.02
-.04
Mother
Woman without kids
Satisfied with schedule
3.14
3.12
3.1
3.08
3.06
3.04
**
Mother
Woman without kids
+p<0.10 *p<0.05 **p<0.01 ***p<0.001

Figure 2.

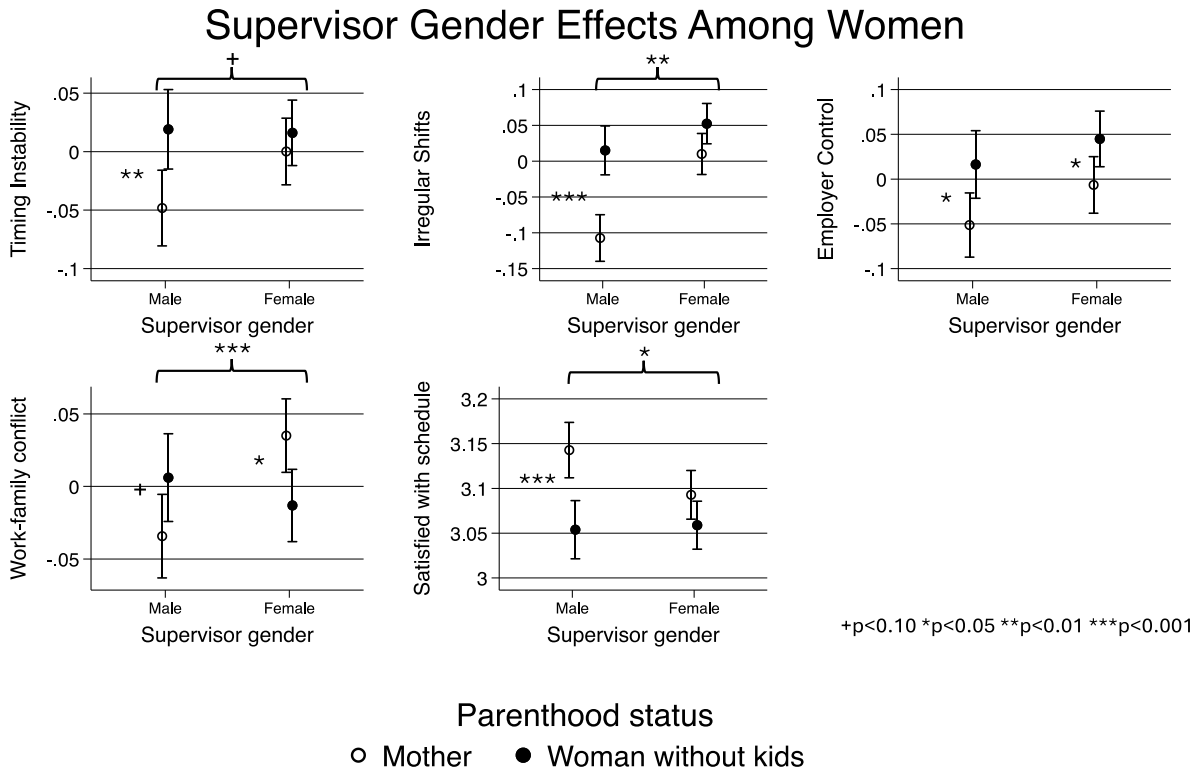

Supervisor Gender Effects Among Women
Timing Instability
Irregular Shifts
Employer Control
Work-family conflict
Satisfied with schedule
Male
Female
Supervisor gender
+p<0.10 *p<0.05 **p<0.01 ***p<0.001
Parenthood status
Mother
Woman without kids

Figure 3.

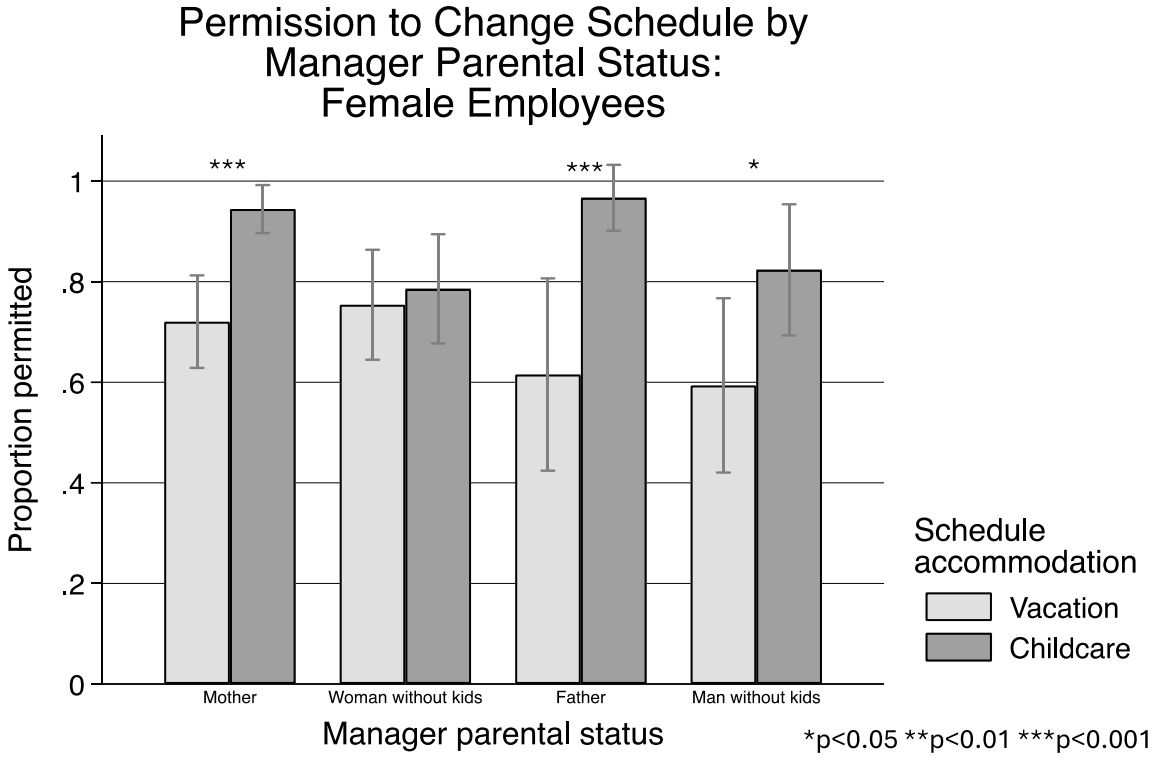
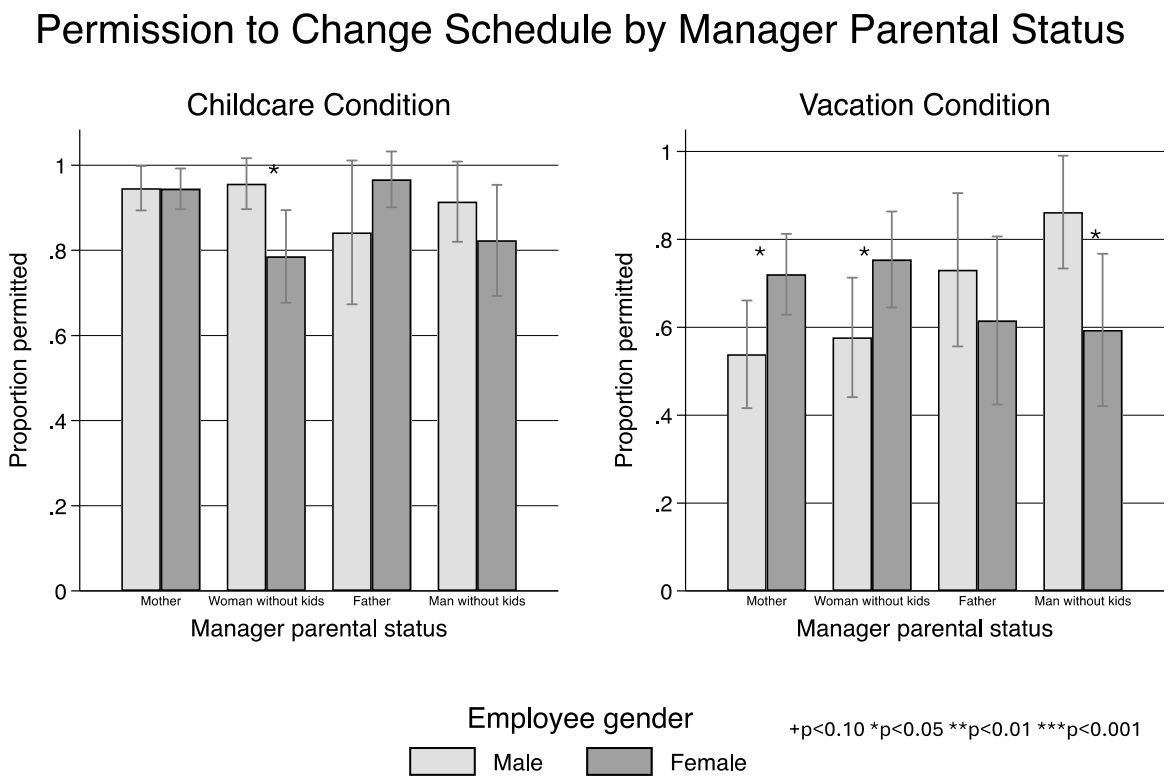

Permission to Change Schedule by
Manager Parental Status:
Female Employees
Proportion permitted
0
.2
.4
.6
.8
1
***
***
*
Mother
Woman without kids
Father
Man without kids
Manager parental status
Schedule
accommodation
Vacation
Childcare
*p<0.05 **p<0.01 ***p<0.001

Figure 4.


Permission to Change Schedule by Manager Parental Status
Childcare Condition
Vacation Condition
Proportion permitted
0
.2
.4
.6
.8
1
Mother
Woman without kids
Father
Man without kids
Manager parental status
*
Employee gender
Male
Female
+p<0.10 *p<0.05 **p<0.01 ***p<0.001

Appendix 1. Data Appendix

The Shift Project Data

The Shift Project uses online surveys to collect rich and detailed data that is not otherwise available from a large sample of low-wage workers in the service sector – a population that can be difficult to reach and often comprises just a small portion of sampling frames for publicly available data sources such as the NLSY or CPS. In addition to work scheduling data also collected by publicly available surveys like the NLSY, Shift Project surveys collect detailed data on respondents' exposure to various forms of just-in-time scheduling practices, scheduling preferences and satisfaction, and how their work schedule affects work-family conflict. Shift data are employee-employer matched, allowing analysts to assess interorganizational variation in working conditions, wages, and inequality. Finally, including vignette experiments in Shift Project surveys allows us to study how difficult-to-observe processes unfold across different contexts.

One potential concern when using the Shift Project dataset is that these data are drawn from a nonprobability sample with a low response rate, potentially raising concerns about bias due to selection into the sample. Previous analyses of Shift data have shown that associations between key analytic variables are comparable to those observed in "gold standard" large-scale national datasets such as the Current Population Survey (CPS) or the National Longitudinal Survey of Youth (NLSY) and found little evidence of selection on unobservables (Schneider and Harknett 2019a, 2019b), suggesting that associations observed in the Shift sample should be generalizable to the population of interest. There may be concern that the estimated treatment effects from the vignette experiments are not generalizable to any substantively meaningful real-world population due to non-random selection into the sample. However, recent work has shown that experimental treatment effects estimated from online convenience samples are generally comparable to estimates from population samples, particularly after controlling for differences in observable characteristics (Goodman, Cryder, and Cheema 2013; Weinberg, Freese, and McElhattan 2014; Mullinix et al. 2015; Levay, Freese, and Druckman 2016).

Construction of outcome variables

Schedule quality

Drawing on a conceptual framework and recommendations developed by Lambert and Fugiel (2023), these analyses use three empirically derived outcome measures that describe different dimensions of schedule quality. Most research on work scheduling operationalizes schedule instability using a set of individual measures of schedule quality. These may include measures of individuals' usual hours per week, the type of shift they typically work, how far in advance they know their schedule, how frequently their shifts are extended, cut short, or cancelled altogether, or how much input they have into their schedule. While each of these measures describes a specific scheduling outcome, they can also be understood as one component of a more general dimension of schedule quality like timing, control, variation, predictability, or other broad constructs.

I use factor analysis of 8 scheduling indicators to obtain three measures of schedule quality that I use as outcome variables. The individual scheduling indicators are described in Appendix 1 Table 1. Principal-component factor analysis is used to generate factors per Acock's (2016)

recommendation to use principal components methods when developing a measure of a concept. An oblique rotation is implemented because dimensions of schedule quality are very unlikely to be uncorrelated. Predicted values for each factor are obtained by the regression method. Factor loadings are expressed as regression coefficients in Appendix 1 Table 2.

This procedure produces three factors that explain a meaningful proportion of the variance in the scheduling outcomes. Each factor is a continuous variable standardized to a mean of 0 and variance of 1. The first factor is characterized by high loadings on exposure to on-call shifts, shift-cancellations, timing changes, short notice, and hour variation. This factor captures instability in timing within individual shifts. The second factor has high loadings on clopening shifts, irregular schedules, and short notice (negative). This broadly describes schedules where shifts routinely occur at different times during the day. The third factor has high loadings on schedule control, short notice, and hour variation (negative). This describes high levels of employer control.

Work-family conflict

The work-family conflict scale is constructed by summing each item, with scores on items reversed if they are negatively correlated with the underlying construct, and standardizing to a mean 0 and variance 1. Cronbach's alpha describes the reliability of the scale. The work-family conflict scale has an $\alpha = 0.81$, which is just above conventional thresholds for reliability.

Schedule satisfaction

Schedule satisfaction is measured using a 4-level Likert scale.

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Appendix 1 Tables

A1.1 Descriptions of variables used to create outcome measures

Variable	Description
Schedule instability factors	
Hour variation	Greatest hours - fewest hours Greatest hours: In the last month, what is the greatest number of hours you've worked in a week at [EMPLOYER NAME]? (Please consider all hours, including any extra hours, overtime, work you did at home, and so forth). Fewest hours: In the last month, what is the fewest hours you've worked in a week at [EMPLOYER NAME]? (Please do not include weeks in which you missed work because of illness or vacation.)
On-call	In the past month or so, have you ever been asked to be "on-call" for work at [EMPLOYER NAME]? By "on-call", we mean you have to be available to work, and you find out if you are needed to work just a few hours before your shift.
Cancelled shift	In the past month or so, did your employer ever cancel one of your scheduled shifts at [EMPLOYER NAME]?
Timing change	In the past month or so, did your employer ever change the timing or the length of your scheduled shift at [EMPLOYER NAME]? For example, your employer asked you to come in early or late, or asked you to leave early or to stay later than the hours you were originally scheduled for.
Clopening	In the past month or so, have you ever worked a closing shift and then worked the very next opening shift with less than 11 hours off in between your shifts at [EMPLOYER NAME]? This is sometimes called "clopening."
Short notice	How far in advance do you usually know what days and hours you will need to work at [EMPLOYER NAME]? 0) 2+ weeks 1) Less than 2 weeks
No control	Which of the following statements best describes how the times you start and finish work are decided at [EMPLOYER NAME]? 0) Employee decides or employer decides with employee input 1) Starting and finishing times are decided by my employer and I cannot change them on my own.
Irregular schedule	Which of the following best describes your work schedule at [EMPLOYER NAME]? 0) Regular daytime schedule/regular evening shift/regular night shift 1) Variable schedule (changes day to day)/rotating shift/split shift/other
Work-family conflict scale	Standardized scale using 4 measures of work-family conflict (alpha=0.81)
Get time off	It is easy to get time off from [EMPLOYER NAME] when I need it 1) Strongly agree 2) Agree 3) Disagree 4) Strongly disagree
Shift causes family stress	My shift and work schedule at [EMPLOYER] cause extra stress for me and my family 1) Always true 2) Often true 3) Sometimes true 4) Never true
Flexibility to handle family matters	In my work schedule at [EMPLOYER], I have enough flexibility to handle family needs 1) Never true 2) Sometimes true 3) Often true 4) Always true
Hard to caregive	My shift and work schedule at [EMPLOYER NAME] make it hard for me to provide caregiving for my family or relatives. 1) Always true 2) Often true 3) Sometimes true 4) Never true
Schedule satisfaction	In all, how satisfied are you with your work schedule at [EMPLOYER]? 1) Not at all satisfied 2) Not too satisfied 3) Somewhat satisfied 4) Very satisfied

A1.2 Factor loadings as regression coefficients

	Timing instability	Shift irregularity	Employer control
On-call	0.390	-0.022	-0.016
Cancelled shift	0.317	0.041	0.123
Timing change	0.309	0.187	0.001
Clopening	0.058	0.497	0.034
Short notice	0.368	-0.332	0.358
No control	-0.008	0.022	0.839
Irregular schedule	-0.058	0.548	0.003
Hour variation	0.364	0.108	-0.335

Appendix 2. Regression-adjusted vignette experiment predicted probabilities

The main analyses of the vignette experiments present differences in raw proportions of managers who permit employee to make last-minute changes to their schedule. Experimental treatments were randomly assigned, thus alleviating concerns about confounding by selection into treatment conditions. To check the robustness of these results, I also use linear probability models to estimate adjusted probabilities that managers will permit employees to change their schedules under different vignette conditions. The models are specified as:

$$\begin{aligned} Y_i = \beta_0 + \beta_1(\text{parenthood status})_i + \beta_2(\text{vignette worker gender}) + \beta_3(\text{schedule conflict}) \\ + \beta_4(\text{parenthood status X vignette worker gender}) \\ + \beta_5(\text{parenthood status X schedule conflict}) \\ + \beta_6(\text{vignette worker gender X schedule conflict}) \\ + \beta_7(\text{parenthood status X vignette worker gender X schedule conflict }) + \gamma \text{age}_i \\ + \delta\eta_i + \epsilon_i \end{aligned} \qquad (1)$$

where η_i represents firm fixed effects to account for heterogeneity in managers' scheduling environments. Full three-way interactions between manager parenthood status, vignette worker gender, and vignette schedule condition are required to obtain the predicted probabilities that correspond to the above measures of the motherhood scheduling premium.

Regression results are presented in Table A2.1. Predicted probabilities (Table A2.2) are obtained using Stata's -margins- command. A Wald test is used to test differences in predicted probabilities.

Regression-adjusted results generate the same qualitative findings for female managers, the primary focus of these analyses. Managers who are mothers favor female employees' childcare requests over vacation requests, while managers who are women without children grant both types of requests at the same relatively low rate. Managers who are mothers also grant female and male employees' requests for childcare-related schedule accommodations at the same rate, while managers who are women without children penalize female employees' childcare-related requests. Like the analyses of raw proportions, male managers are favor female employees' requests for childcare-related scheduling accommodations over vacation requests. Unlike the analyses of raw proportions, favor women over men in the childcare condition and men over women in the vacation condition, while there are no significant differences for men without children.

A2.1 Linear probability model of permission to change schedule

	Permission to change schedule
Parenthood status (base=mother)	
Woman without kids	0.0316
Father	0.200*
Man without kids	0.306***
Vignette worker gender	
Female	0.208**
Parenthood status X vignette worker gender	
Woman without kids X female	-0.00842
Father X female	-0.272*
Man without kids X female	-0.465***
Experimental condition	
Childcare	0.411***
Parenthood status X experimental condition	
Woman without kids X childcare	-0.0216
Father X childcare	-0.364*
Man without kids X childcare	-0.361**
Vignette worker gender X experimental condition	
Female X childcare	-0.209*
Parenthood X worker gender X condition	
Woman without kids X female X childcare	-0.162
Father X female X childcare	0.475*
Man without kids X female X childcare	0.416*
Age	Yes
Employer fixed effects	Yes

A2.2 Proportion of managers granting permission to change schedule, female employees

Employee gender	Female		
Experimental condition	Childcare	Vacation	Difference
Manager parenthood status			
Mother	0.942	0.740	0.202***
Woman without kids	0.782	0.764	0.018
Father	0.981	0.668	0.313**
Man without kids	0.839	0.581	0.258**

N=768; +p<0.10 *p<0.05 **p<0.01 ***p<0.001

A2.3. Proportion of managers granting permission to change schedule by condition

Experimental condition	Childcare			Vacation		
Employee gender	Female	Male	Difference	Female	Male	Difference
Manager parenthood status						
Mother	0.942	0.944	-0.002	0.740	0.533	0.207***
Woman without kids	0.782	0.954	-0.172*	0.764	0.564	0.200**
Father	0.981	0.780	0.201+	0.668	0.733	-0.0650*
Man without kids	0.839	0.889	-0.050	0.581	0.839	-0.258

N=768; +p<0.10 *p<0.05 **p<0.01 ***p<0.001

Appendix 3. Subgroup Analyses

It is possible that motherhood scheduling advantages and effects of female managers estimated in analyses of survey data from the non-manager sample vary depending on the constraints that mothers face when confronted with a last-minute scheduling adjustment. To examine this potential heterogeneity, I examine who scheduling outcomes and the moderating effects of female managers differ when mothers are separated into subgroups based on 1) child age (all children at least 13 years old vs. at least one child less than 13) and 2) cohabitation status (cohabiting partner vs. single). Results from these analyses are presented below in Tables A3.1-A3.4. In almost all instances, results do not differ meaningfully between subgroups of mothers. However, there are a couple exceptions. Perhaps unsurprisingly, single mothers and mothers with any children younger than 13 years old have higher levels of work-family conflict than cohabiting mothers and mothers whose children are all at least 13 years old, respectively. Female managers generally do not have different effects on mothers' scheduling outcomes by child age or cohabitation status. But, female managers have stronger negative effects on work-family conflict for cohabiting mothers compared to single mothers. In all, there is not much evidence that motherhood scheduling premia or the moderating effects of female managers differ between groups of mothers who face different scheduling constraints.

Table A3.1. Regressions of scheduling outcomes on parenthood status, mothers by child age

	Timing instability				Shift irregularity			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother, all kids 13+)								
Mother, any kid<13	0.00637	0.0272	-0.00124	-0.00697	-0.131***	-0.125***	-0.0672*	-0.0448+
Woman without kids	-0.0577**	-0.0583**	-0.0193	0.0352+	0.168***	0.105***	0.0838***	0.0607**
Father	-0.116***	-0.0869***	-0.0188	0.00713	-0.0772**	-0.0880***	-0.00334	0.0249
Man without kids	-0.123***	-0.128***	-0.0387+	0.0334	0.0616**	0.0115	0.0431+	0.0393+
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Employer control				Work-family conflict			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother, all kids 13+)								
Mother, any kid<13	0.0465	0.0115	-0.00207	-0.0182	0.0712**	0.0520*	0.0513*	0.0560*
Woman without kids	-0.0432+	0.0107	0.0235	0.0517*	0.00678	0.0121	0.00241	0.00692
Father	0.0831**	0.0886**	0.0742**	0.0659*	0.105***	0.0979***	0.0597**	0.0595**
Man without kids	-0.0713**	-0.0405+	-0.0406	-0.0124	0.00901	0.0162	-0.0173	-0.00949
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Schedule satisfaction							
	(1)	(2)	(3)	(4)				
Parenthood status (base=mother, all kids 13+)								
Mother, any kid<13	0.00435	0.0147	-0.00244	-0.00818				
Woman without kids	-0.0856***	-0.0675***	-0.0616**	-0.0596**				
Father	-0.0675**	-0.0677**	-0.0883***	-0.0885***				
Man without kids	-0.0905***	-0.0729***	-0.0825***	-0.0883***				
Age	Yes	Yes	Yes	Yes				

Demographics and human capital	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes

Note: N=20,987; +p<0.10 *p<0.05 **p<0.01 ***p<0.001. Demographics and human capital include race, education, enrollment status, and marital status. Work characteristics include usual hours, tenure, hourly wage, occupation, and subsector.

Table A3.2. Regressions of scheduling outcomes on parenthood status, mothers by cohabitation

	Timing instability				Shift irregularity			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=cohabiting mother)								
Single mother	0.127***	0.0476	0.0464	0.0294	0.0300	0.0108	0.0147	0.0136
Woman without kids	-0.0194	-0.0467*	0.00145	0.0503*	0.224***	0.152***	0.113***	0.0814***
Father	-0.0728**	-0.0789**	-0.00456	0.0176	-0.0381	-0.0569*	0.0161	0.0392
Man without kids	-0.0842***	-0.115***	-0.0162	0.0496*	0.116***	0.0574*	0.0718**	0.0602*
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Employer control				Work-family conflict			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=cohabiting mother)								
Single mother	0.0352	0.0468	0.0324	0.0241	0.00279	0.0741**	0.0634*	0.0538*
Woman without kids	-0.0485*	0.0274	0.0384	0.0683**	-0.0178	0.0270	0.0130	0.0119
Father	0.0855**	0.0999***	0.0844**	0.0774**	0.0907***	0.108***	0.0673**	0.0630**
Man without kids	-0.0756**	-0.0221	-0.0246	0.00486	-0.0142	0.0343	-0.00377	-0.00206
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Schedule satisfaction							
	(1)	(2)	(3)	(4)				
Parenthood status (base=cohabiting mother)								
Single mother	-0.0482*	-0.0339	-0.0434	-0.0415				
Woman without kids	-0.103***	-0.0874***	-0.0799***	-0.0750***				
Father	-0.0855***	-0.0810***	-0.101***	-0.0992***				
Man without kids	-0.108***	-0.0938***	-0.102***	-0.105***				
Age	Yes	Yes	Yes	Yes				
Demographics and human capital	No	Yes	Yes	Yes				
Work characteristics	No	No	Yes	Yes				
Firm fixed effects	No	No	No	Yes				

Note: N=20,987; +p<0.10 *p<0.05 **p<0.01 ***p<0.001. Demographics and human capital include race, education, enrollment status, and marital status. Work characteristics include usual hours, tenure, hourly wage, occupation, and subsector.

Table A3.3. Regressions of scheduling outcomes on parenthood status by supervisor gender, mothers by child age

	Timing instability	Shift irregularity

	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother, all kids 13+)								
Mother, any kid<13	-0.0190	-0.000971	-0.0495	-0.0417	-0.0813*	-0.0819*	-0.0389	-0.0329
Woman without kids	-0.0321	-0.0316	-0.0114	0.0568*	0.201***	0.138***	0.133***	0.110***
Father	-0.0903**	-0.0598+	-0.0126	0.00511	0.0301	0.0190	0.0539	0.0787*
Man without kids	-0.0677*	-0.0691*	0.0103	0.0617*	0.153***	0.101**	0.0975**	0.0858**
Supervisor gender								
Female	0.116***	0.114***	0.0582*	0.0344	0.189***	0.190***	0.122***	0.121***
Parenthood X supervisor gender								
Mother, any kid<13 X female	0.0519	0.0559	0.0856+	0.0619	-0.0755	-0.0662	-0.0470	-0.0184
Woman without kids X female	-0.0439	-0.0459	-0.0157	-0.0373	-0.0583+	-0.0577+	-0.0833**	-0.0836**
Father X female	0.0117	0.00594	0.0138	0.0246	-0.177**	-0.177**	-0.0997+	-0.0984+
Man without kids X female	-0.0816*	-0.0907*	-0.0962*	-0.0565	-0.136***	-0.131**	-0.0894*	-0.0768*
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes

	Employer control				Work-family conflict			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=mother, all kids 13+)								
Mother, any kid<13	0.0185	-0.0114	-0.0284	-0.0348	0.0587+	0.0389	0.0413	0.0517
Woman without kids	-0.0341	0.0150	0.0242	0.0576+	0.0533*	0.0545*	0.0479+	0.0584*
Father	0.0799*	0.0846*	0.0723*	0.0620+	0.137***	0.129***	0.0841**	0.0762**
Man without kids	-0.0778*	-0.0493	-0.0481	-0.0212	0.0548*	0.0598*	0.0253	0.0334
Supervisor gender								
Female	0.0157	0.0140	0.0298	0.0380	0.0651**	0.0640**	0.0792***	0.0676***
Parenthood X supervisor gender								
Mother, any kid<13 X female	0.0506	0.0415	0.0472	0.0296	0.0243	0.0258	0.0194	0.00943
Woman without kids X female	-0.0143	-0.00632	-0.000996	-0.00935	-0.0783**	-0.0715*	-0.0770**	-0.0870**
Father X female	0.0221	0.0229	0.0152	0.0203	-0.0452	-0.0455	-0.0257	-0.00920
Man without kids X female	0.0212	0.0262	0.0229	0.0246	-0.0822*	-0.0773*	-0.0753*	-0.0794*
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes

	Schedule satisfaction			
	(1)	(2)	(3)	(4)
Parenthood status (base=mother, all kids 13+)				
Mother, any kid<13	0.00142	0.0148	0.00579	-0.00576
Woman without kids	-0.110***	-0.0890***	-0.0842**	-0.0912***
Father	-0.106***	-0.107***	-0.106***	-0.101**
Man without kids	-0.142***	-0.123***	-0.117***	-0.125***
Supervisor gender				
Female	-0.0859***	-0.0849***	-0.0581**	-0.0488*
Parenthood X supervisor gender				

Mother, any kid<13 X female	0.000539	-0.00447	-0.0157	-0.00546
Woman without kids X female	0.0419	0.0373	0.0388	0.0538+
Father X female	0.0499	0.0530	0.0200	0.00851
Man without kids X female	0.0863*	0.0821*	0.0620+	0.0700*
Age	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes

Note: N=20,987; +p<0.10 *p<0.05 **p<0.01 ***p<0.001. Demographics and human capital include race, education, enrollment status, and marital status. Work characteristics include usual hours, tenure, hourly wage, occupation, and subsector.

Table A3.4. Regressions of scheduling outcomes on parenthood status by supervisor gender, mothers by child age

	Timing instability				Shift irregularity			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=cohabiting mother)								
Single mother	0.158***	0.0816*	0.0765*	0.0507	0.00134	-0.0156	-0.0190	-0.0113
Woman without kids	0.0225	-0.00197	0.0311	0.0875**	0.236***	0.166***	0.143***	0.119***
Father	-0.0301	-0.0342	0.0226	0.0307	0.0488	0.0316	0.0552	0.0817*
Man without kids	-0.0123	-0.0372	0.0542+	0.0934**	0.186***	0.128***	0.108***	0.0951**
Supervisor gender								
Female	0.147***	0.145***	0.0955***	0.0611*	0.157***	0.160***	0.0920***	0.103***
Parenthood X supervisor gender								
Single mother X female	-0.0543	-0.0550	-0.0513	-0.0365	0.0481	0.0486	0.0571	0.0417
Woman without kids X female	-0.0747*	-0.0770*	-0.0526	-0.0640*	-0.0253	-0.0269	-0.0532	-0.0652*
Father X female	-0.0189	-0.0243	-0.0222	-0.00144	-0.145*	-0.146**	-0.0690	-0.0795
Man without kids X female	-0.113**	-0.122**	-0.133***	-0.0832*	-0.103*	-0.0993*	-0.0588	-0.0583
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes
	Employer control				Work-family conflict			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Parenthood status (base=cohabiting mother)								
Single mother	0.0417	0.0532	0.0393	0.0296	0.0585*	0.131***	0.116***	0.101**
Woman without kids	-0.0309	0.0390	0.0476	0.0800*	0.0509*	0.0917***	0.0787**	0.0802**
Father	0.0906*	0.103**	0.0905*	0.0790*	0.144***	0.161***	0.112***	0.0965**
Man without kids	-0.0736*	-0.0235	-0.0236	0.00189	0.0537*	0.100***	0.0592*	0.0578*
Supervisor gender								
Female	0.0303	0.0265	0.0443	0.0478+	0.103***	0.103***	0.115***	0.0978***
Parenthood X supervisor gender								
Single mother X female	-0.0114	-0.00987	-0.0111	-0.00889	-0.0960*	-0.0977**	-0.0910*	-0.0813*
Woman without kids X female	-0.0293	-0.0186	-0.0153	-0.0192	-0.117***	-0.111***	-0.112***	-0.117***
Father X female	0.00729	0.0115	0.00161	0.0110	-0.0837+	-0.0833+	-0.0603	-0.0383
Man without kids X female	0.00600	0.0139	0.00859	0.0148	-0.121***	-0.117***	-0.111**	-0.109**
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Demographics and human capital	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes	No	No	No	Yes

	Schedule satisfaction			
	(1)	(2)	(3)	(4)
Parenthood status (base=cohabiting mother)				
Single mother	-0.0625*	-0.0496	-0.0566	-0.0522
Woman without kids	-0.131***	-0.114***	-0.109***	-0.111***
Father	-0.128***	-0.125***	-0.125***	-0.116***
Man without kids	-0.164***	-0.149***	-0.143***	-0.146***
Supervisor gender				
Female	-0.0946***	-0.0950***	-0.0695**	-0.0564*
Parenthood X supervisor gender				
Single mother X female	0.0251	0.0255	0.0227	0.0186
Woman without kids X female	0.0507	0.0471	0.0499	0.0612*
Father X female	0.0586	0.0623	0.0304	0.0152
Man without kids X female	0.0951*	0.0919*	0.0732*	0.0775*
Age	Yes	Yes	Yes	Yes
Demographics and human capital	No	Yes	Yes	Yes
Work characteristics	No	No	Yes	Yes
Firm fixed effects	No	No	No	Yes

Note: N=20,987; +p<0.10 *p<0.05 **p<0.01 ***p<0.001. Demographics and human capital include race, education, enrollment status, and marital status. Work characteristics include usual hours, tenure, hourly wage, occupation, and subsector.