Social Indicators Research (2026) 182:10
https://doi.org/10.1007/s11205-026-03815-x

ORIGINAL RESEARCH

Gender and Parenthood Differences in Work Time Fragmentation in the United States: The Moderating Role of Occupational Class

Sizhan Cui[1] · **Zhuofei Lu**[1] · **Senhu Wang**[2]

Received: 30 August 2025 / Accepted: 28 January 2026

Abstract
Work time fragmentation refers to the number of distinct work episodes in a day, indicating disruptions in work schedules and the degree of workday fragmentation. With the expansion of flexible labor markets in the U.S., work time fragmentation has become more prevalent. Although gender and parenthood differences in labor market outcomes and family responsibilities are well studied, their manifestation in work time fragmentation remains underexplored. Using data from the American Time Use Survey 2003–2023 and OLS regression models, this study is the first to examine gender and parenthood differences in work time fragmentation and their variation by occupational class. Findings indicate that women experience greater fragmentation than men. For women, those with dependent children, particularly those with young children, show greater fragmentation than women without coresidential children. This pattern is most pronounced among those in higher occupational classes. For men, there is no evidence showing that there is a difference in work time fragmentation intensity by parenthood status or occupational class. The findings underscore the importance of equitable parental leave, shared caregiving responsibilities, and supportive workplace structures in addressing these dynamics and promoting equity in work-family relationships.

Keywords Parenthood · Gender · Time fragmentation · Occupational class · Gender difference · Time use

✉ Zhuofei Lu
zhuofei.lu@sociology.ox.ac.uk

✉ Senhu Wang
socsw@nus.edu.sg

Sizhan Cui
sizhan.cui@sociology.ox.ac.uk

[1] Department of Sociology, University of Oxford, 42-43 Park End Street, Oxford OX1 1JD, England, UK

[2] Department of Sociology and Anthropology, National University of Singapore, 11 Arts Link, #03-06 AS1, Singapore 117573, Singapore

Published online: 03 March 2026

1 Introduction

Previous studies on gender and parenthood differences have predominantly focused on labor market outcomes, such as wages, work hours, opportunities for promotion, and work-life balance (Bittman et al., 2003; Budig & England, 2001; England, 2005; Lyness & Judiesch, 2008; Oostendorp, 2009), as well as the distribution of family responsibilities (Kolpashnikova & Kan, 2021; Swinkels et al., 2019). The findings consistently highlight the "motherhood penalty", where mothers face wage reductions, limited career advancement (Tverdostup, 2023; Zilanawala, 2016), and a disproportionate burden of domestic responsibilities (Bianchi et al., 2012; Moen et al., 1994; Raley et al., 2012). In contrast, fathers often do not experience comparable disadvantages. These gender and parenthood disparities reflect entrenched societal expectations of women, particularly mothers, as primary homemakers, which not only constrain their participation and advancement in the labor force but also reinforce unequal burdens.

Despite the rich body of research on gender and parenthood differences, a significant gap remains in understanding how these disparities manifest in work time fragmentation. Work time fragmentation refers to a process in which the number of distinct work episodes per day increases, with more episodes indicating more disruptions in the work schedule, thus creating a more fragmented workday (Merz et al., 2009; Sullivan & Gershuny, 2017). As the labor market evolves with greater flexibility in the U.S., the boundaries between work and family spheres become increasingly blurred, resulting in more frequent interruptions that disrupt traditional work patterns (Delanoeije et al., 2019; Li, 2023; Peetz, 2019). This shift has led to a move from continuous, uninterrupted work to more fragmented, dispersed work periods throughout the day (De Alwis et al., 2022). Work time fragmentation can be categorized into active fragmentation, where individuals intentionally pause work for personal or caregiving tasks, and passive fragmentation, which occurs due to unexpected disruptions such as household demands or childcare needs.

In this context, analyzing work time fragmentation through time-use data offers a new perspective on these differences, revealing patterns that are otherwise hidden in aggregate statistics or traditional labor force surveys. For example, time-use data can highlight how caregiving responsibilities, often disproportionately borne by women, lead to more fragmented workdays compared to their male counterparts or parents without caregiving duties. Work time fragmentation serves as a measurable indicator of time-use patterns, work-family integration, and work-family conflict (Cornwell et al., 2019). Regarding the nature of work time fragmentation, on the one hand, when supported by organizational structures, schedule flexibility can mitigate work-family conflict, suggesting that proactive forms of flexibility may promote a healthier work-life balance (Kelly et al., 2011). On the other hand, work time fragmentation does not always reflect empowering flexibility; rather, fragmented or unstable schedules can disrupt the "hidden rhythms" that structure daily life (Zerubavel, 1985), leading to a sense of disorientation. Such disruptions can undermine stable temporal patterns and challenge normative expectations around time use (Bak, 2022; Zucchermaglio & Talamo, 2000).

To address these limitations and expand on the understanding of gender and parenthood differences in work time fragmentation, this study uses ordinary least squares (OLS) regression models to analyze 73,710 diary days from the American Time Use Survey (ATUS) 2003–2023 (https://www.bls.gov/tus/data/datafiles-0323.htm) to investigate the intersection

of gender, parenthood, and occupational class on work time fragmentation. Specifically, the study aims to achieve three objectives. First, this study examines whether there are gender differences in work time fragmentation. Second, it examines the interaction of gender and parenthood on work time fragmentation. Third, it investigates whether the intersection of parenthood and occupational classes on work time fragmentation differ by gender. Through this analysis, the study aims to enhance understanding of the gendered dynamics of parenthood and their influence on work time fragmentation, as well as the implications for work-life integration.

The findings of this study hold significant theoretical and policy implications. From a theoretical perspective, they deepen our understanding of how gender norms and parenthood intersect to influence work time fragmentation, highlighting the persistent influence of caregiving responsibilities on women, particularly mothers, and the limited impact of occupational class on men's experiences. This extends the theory of work-family conflict to include temporal inequalities, offering a novel framework for analyzing labor market disparities. From a policy perspective, the findings underscore the need for measures that address gender norms and caregiving responsibilities. Policies promoting flexible yet predictable work arrangements, subsidized childcare during nonstandard hours, and equitable parental leave can reduce work time fragmentation, particularly for mothers. Workplace cultures must also shift to support caregiving responsibilities rather than penalize them. For women in high-demand professions, on-site childcare and reasonable scheduling aid work-family balance, while greater flexibility and autonomy benefit those in lower-status jobs. The consistently low fragmentation among men highlights the need for policies encouraging shared caregiving. Tracking work time fragmentation can inform policy effectiveness and drive more inclusive workplace practices.

2 Literature Review

Previous research on gender and parenthood differences has mainly focused on the disadvantages faced by women, particularly mothers, in both the labor market and household settings. These differences are evident in unequal wages, employment patterns, work hours (Cohen & Huffman, 2007; Oostendorp, 2009; Tverdostup, 2023), as well as the distribution of housework and caregiving responsibilities (Kolpashnikova & Kan, 2021; Swinkels et al., 2019). These contrasting experiences underscore the persistent gender and parenthood differences that are associated with work-family dynamics, with motherhood remaining a significant factor in shaping women's career trajectories and economic outcomes.

Although these differences have been extensively examined, their manifestation in work time fragmentation has received insufficient attention. There is a pressing need to address this gap, as investigating work time fragmentation using time-use data provides unique insights beyond traditional measures of work hours and patterns. Unlike traditional measures of work hours and patterns in aggregate statistics or traditional labor force surveys, studying work time fragmentation using time use data can help capture both the temporal and emotional strain of managing competing demands across work and family domains (Cornwell, 2013). Specifically, work time fragmentation, which objectively captures the dynamics of role-switching between work and family responsibilities, has recently gained

attention from scholars in labor sociology and economics as a potential social indicator of work-life conflict (Cornwell et al., 2019).

Regarding the nature of work time fragmentation, on the one hand, schedule flexibility can help reduce work-family conflict when supported by organizational structures, suggesting that proactive flexibility may enhance work-life balance (Kelly et al., 2011). On the other hand, work time fragmentation may not always indicate empowering flexibility but can instead reflect unpredictable and externally imposed interruptions to the workday (Zerubavel, 1985). Such fragmentation may disrupt stable temporal patterns and challenge established social expectations around time use (Bak, 2022; Zucchermaglio & Talamo, 2000). This study does not aim to evaluate whether work time fragmentation is inherently good or bad, but instead seeks to examine how daily work schedules vary by gender and parental status, and to explore the structural and behavioral factors underlying these patterns.

Given these considerations, examining gendered and parenthood differences in work time fragmentation is essential for uncovering the underlying work-family dynamics and addressing the structural factors that persist within both the workplace and the home.

2.1 The Role of Gender and Parenthood on Work Time Fragmentation

We expect that gender and parenthood are important dimensions associated with differences in work time fragmentation, with women experiencing higher levels of fragmentation than men. Furthermore, the influence of parenthood on work time fragmentation is expected to be more pronounced for women than for men, particularly among those with young children. These patterns are expected to be most evident among mothers with younger dependent children, considering the heightened caregiving responsibilities characteristic of early childhood.

First, the division of labor within households, as posited by family economic theory, traditionally positions men as breadwinners and women, particularly mothers, as caregivers to maximize family utility (Becker, 1991). Despite significant increases in women's participation in the labor force over recent decades (Kan & Laurie, 2018; ONS, 2024), the unequal distribution of household and caregiving tasks remains a persistent issue (Charmes, 2019; West & Zimmerman, 1987). Work patterns are often shaped by childcare, particularly for young children, and other domestic responsibilities, which place greater demands on mothers than on fathers because of their primary caregiving roles (Beauregard, 2007; Xue & McMunn, 2021; Zhou et al., 2025). These pressures are further reinforced by societal expectations that stigmatize women, particularly mothers, who prioritize paid employment, framing such choices as neglecting family responsibilities (Desjardins et al., 2024). As a result, many women feel compelled to place caregiving above professional responsibilities, adjusting their work schedules to meet their children's needs (Gaunt et al., 2022; Sahni et al., 2025; Xue & McMunn, 2021). This often leads mothers to work during off-peak hours or to fragment their working time into multiple segments throughout the day (Desjardins et al., 2024; Yucel & Chung, 2023). For full-time employees, the extent of such fragmentation is shaped by access to flexible work arrangements, such as telework or flexible hours, which enable workers to reorganize their schedules around caregiving demands. Importantly, the use of these options is closely tied to household composition and childcare needs, rather than to class privilege alone (Chung & van der Horst, 2020; Chung & van der Lippe, 2020).

Second, occupational segregation contributes to patterns of work time fragmentation among women. Women remain disproportionately concentrated in occupations such as caregiving, cleaning, education, and personal services, where part-time work, nonstandard hours, and irregular scheduling are common (England et al., 2020; Goldin, 2015). These employment patterns reflect broader processes of gendered occupational sorting, in which women's labor force participation is shaped by structural constraints, caregiving responsibilities, and norms surrounding appropriate "women's work" (Gangl & Ziefle, 2009; Gilbert-Ouimet et al., 2020; Suleiman et al., 2021). These patterns reflect broader processes of gendered occupational sorting, a process through which women are systematically funneled into certain sectors and job types based on historically embedded gender norms, employer expectations, and the alignment of women's labor with care-related skills (Blackburn et al., 1993). Occupational sorting not only maintains gender segregation within sectors such as white-collar, service, and sales occupations (Busch, 2020), but also shapes women's long-term employment trajectories by limiting access to occupations that offer greater schedule autonomy and stability (Ishizuka & Musick, 2021). In these sectors, work schedules are often tied to client, service, or institutional demands, which reduces workers' control over when tasks are performed and increases the likelihood of fragmented workdays. Parenthood further intersects with these structural dynamics, as mothers may remain in or choose jobs perceived to offer temporal flexibility or proximity to home, even when such jobs involve unstable, employer-driven scheduling (Fuller & Hirsh, 2019). As a result, gendered occupational sorting, combined with the employment characteristics of female-dominated sectors, contributes to more irregular and fragmented work time among women, particularly mothers.

Given these perspectives, we propose the following hypotheses.

H1: *Women experience greater work time fragmentation than men.*
H2a: *Women with dependent children experience greater work time fragmentation than those without coresidential children, with this pattern being more pronounced for mothers with children in early childhood.*
H2b: *The presence of dependent children has a weaker association with work time fragmentation for men than for women.*

2.2 The Moderating Role of Occupational Class in the Relationship Between Parenthood and Work Time Fragmentation by Gender

Given that different occupational classes have distinct job demands, work-family conflict, and gendered work norms (Kim & Cho, 2020; Lu et al., 2023; Lyonette et al., 2007; Rahkonen, 2006), this study further explores the interaction of gender, parenthood, and occupational class to assess how the association between parenthood and work time fragmentation may vary across different social strata by gender.

The theory of empowerment may suggest that mothers in higher occupational classes may experience less work time fragmentation compared to those in lower occupational classes. Specifically, mothers in higher occupational classes typically earn more and experience a higher level of empowerment and autonomy both at work and within the household (Savage et al., 2013). These advantages may translate into increased control over time and resources, potentially reducing work time fragmentation by enabling them to better manage

the competing demands of work and family life (Coffey et al., 2022; Sullivan, 2011). However, we argue that despite these advantages, the persistent influence of traditional gender norms may lead women in higher occupational classes to experience greater work time fragmentation after parenthood compared to their lower-class counterparts. This may be explained by two key factors.

First, work demands and organizational culture vary across occupational classes and influence work time fragmentation. The high demands of professional roles, coupled with the "ideal worker" ethos, the "work-devotion schema", and the pervasive overwork culture, require constant devotion and availability to work (Blair-Loy, 2003; Schieman et al., 2009). This dynamic intensifies work-family conflict, blurs work-life boundaries, and is compounded by the dual pressures on mothers in higher occupational classes to excel in both career and family, increasing work interruptions (Chung & van der Horst, 2020; Glavin et al., 2011; Schieman et al., 2009). Parenting demands, which remain significant even for mothers in high-status roles, are associated with frequent disruptions due to continuous work expectations (Bianchi et al., 2012). Despite their greater resources, these mothers are not inclined to significantly reduce their time spent on childcare and instead often use those resources to buy out of time in market work and engage in childcare (England & Srivastava, 2013). This dual dilemma of navigating intensive work demands alongside parenting responsibilities leads to more frequent switching between work and caregiving tasks, resulting in greater fragmentation of work time. Conversely, mothers in lower occupational class may experience less fragmented work time due to reduced work demands, such as fewer after-hours expectations and work-related interruptions, as well as clearer boundaries between work and personal life (Greenhaus & Allen, 2011; Kossek & Lautsch, 2018). When faced with rigid job structures that make it difficult to reconcile work and caregiving responsibilities, some women in lower-wage occupations may withdraw from the labor force after childbirth (Chaudry, 2004; Damaske, 2011). This selection effect implies that those who remain employed may be a more resilient or better-supported subgroup that is less affected by work time fragmentation. Additionally, societal pressure to excel in both work and family roles is less intense for lower-status mothers, which allows for a more stable work-life balance with fewer disruptions (Blair-Loy, 2003; Gerson, 2009).

Second, although professional workers often have greater formal access to flexible work arrangements, usage rates remain low due to concerns about negative career consequences, including wage penalties, limited promotion opportunities, and reduced professional standing (Blair-Loy & Wharton, 2002, 2004; Glass, 2004). This phenomenon, known as the "flexibility paradox", reflects the tension between the availability of flexibility and the risks associated with using it (Chung, 2022a). This paradox is particularly relevant for men, who may experience a double stigma when using flexible working arrangements for caregiving purposes. They are not only subject to the general stigma attached to flexibility but also to a femininity stigma, as caregiving continues to be culturally associated with women (Chung, 2022b; Williams et al., 2013). Meanwhile, the weaker empirical evidence of the flexibility paradox found for mothers is largely due to the fact that many studies exclude an important aspect of work in society, namely unpaid domestic and caregiving labor (Chung, 2022c). This helps explain why professional women are more likely than men to use flexible work arrangements after becoming parents, resulting in more fragmented work time as they juggle paid employment and caregiving responsibilities. In contrast, lower-class workers, particu-

larly women and mothers, are often penalized for lacking "open availability", which refers to the expectation that workers be available during all hours the employer may require. Their need for flexibility is frequently interpreted as a sign of unreliability or irresponsibility, and these judgments are often associated with racialized and moralized assumptions (Williams, 2006). As a result, these workers may face serious consequences, including job loss, simply for fulfilling caregiving responsibilities (Williams et al., 2013). Their limited ability to request or make use of flexible arrangements may result in less fragmented work time, not because their schedules are more predictable, but because they are often forced to choose between work and caregiving rather than attempting to balance both.

Given these perspectives, we propose the following hypothesis.

> ***H3:*** *Women experience greater work time fragmentation after parenthood in professional occupations compared to non-professional occupations.*

For men, we expect the association between parenthood and work time fragmentation to be weaker, and to vary less across occupational classes, compared to women. Specifically, men in higher occupational classes are expected to show a relatively weak association between parenthood and work time fragmentation. These men often have access to flexible working arrangements, such as remote work or adjustable schedules, which could theoretically support caregiving responsibilities. However, such arrangements are typically underutilized for caregiving purposes, due to societal and organizational expectations that men remain fully committed to their professional roles (Clausen et al., 2024). The pressure to prioritize career advancement and demonstrate a strong work ethic often overshadows the potential for flexible work arrangements to accommodate caregiving, limiting opportunities for involved fatherhood (Blair-Loy & Williams, 2017; de Laat, 2023). Similarly, men in lower occupational classes are also expected to show a relatively weak association between parenthood and work time fragmentation. These men are more likely to work under rigid, inflexible conditions, such as fixed shifts or extended hours, which restrict their ability to adjust their schedules for caregiving (Gerstel & Clawson, 2015). The gendered division of labor, where caregiving is viewed as a woman's responsibility, further reinforces this dynamic (Connell, 2005; Hochschild & Machung, 1989). Therefore, we expect that occupational class has a comparatively weaker moderating role in the association between parenthood and work time fragmentation for men than for women, and we propose the following hypothesis.

> ***H4:*** *Among men, the relationship between parenthood and work time fragmentation is weaker and less dependent on occupational class compared to women.*

3 Methods

3.1 Data and Sample

This study uses data from the American Time Use Survey (ATUS) spanning 2003 to 2023 (https://www.bls.gov/tus/data/datafiles-0323.htm). The ATUS sample is randomly selected among respondents of the Current Population Survey (CPS) survey and is representative of

the U.S. population aged 15 years and above. This data is collected through one-day time diaries, where participants list the time (in minutes) spent on a set of detailed activities performed in the 24 h before the survey (Bureau of Labor Statistics, 2023). Activity episodes are aggregated into 10-minute intervals to construct the measures of work time fragmentation used in the analysis.

This study focuses on a sample restricted to working-age individuals between 16 and 65 years old who report engaging in paid employment. Only workday diaries are included, as there are significant differences in work expectations and opportunities for leisure and social activities between workdays and non-workdays. These diaries are distinct from weekday diaries, as respondents self-designate their workdays rather than adhering to a fixed Monday-to-Friday schedule. This distinction is particularly important for industries such as retail and hospitality, which often require weekend work. After deleting a small number of missing values of all variables of interest (4.24%), the final analytic sample consists of 73,710 individuals' workday diaries (each individual only has one diary). Further details on the construction of the analytic sample are provided in 6 Table 6.

3.2 Variables and Measures

3.2.1 Dependent Variable

The dependent variable of the study is the density of work time fragmentation. To conceptualize this concept, it is first necessary to define work episodes. A work episode is determined solely based on the primary activity recorded in the time-use diary. Specifically, if an individual reports "work" as their main activity from 9:00 AM to 10:00 AM but engages in various secondary activities during this period, it is still considered a single episode of work. This approach is consistent with prior research (Lu, 2024; Merz et al., 2009), and provides a stable and consistent measure of work fragmentation, reducing potential discrepancies that might arise from variations in multitasking behaviors or differences in how respondents report secondary activities.

Building on this definition, work time fragmentation refers to the frequency with which individuals transition into and out of paid work and work-related activities throughout the day. Following previous research, it is measured by the number of discrete work episodes (Lu, 2024; Merz et al., 2009). The density of work time fragmentation is then calculated as the number of work episodes divided by the total number of work hours. This measure captures the extent to which work time is fragmented relative to the total time spent working. To mitigate the effects of potential outliers and ensure the robustness of our measures, the hours of work and work time fragmentation are top-coded at the 99th percentile before calculating the density of work time fragmentation.

The maximum value of the density of work time fragmentation is 6. The maximum value occurs in a scenario where an individual switches work status every 10 minutes (for example, working from minutes 1–10, not working from minutes 11–20, working from minutes 21–30, and so on). In this case, within a one-hour period, the total number of work episodes would be 3, while the total work hours would be 0.5. Therefore, the density of work time fragmentation is calculated as 3 divided by 0.5, resulting in a value of 6.

3.2.2 Independent Variable

The independent variables are gender and parenthood. Parenthood is defined as the presence of at least one co-residential child under the age of 18, indicating the respondent's caregiving responsibility for dependent children. To further differentiate stages of parental responsibility, we categorize parenthood into three groups based on the age of the youngest child in the household: preschool-aged children (0–4 years), primary school-aged children (5–11 years), and middle to high school-aged children (12–17 years).

3.2.3 Moderating Variable

The moderating variable in this study is occupational class, based on the ATUS major occupation codes. These include the following categories: (1) management, business, and financial occupations; (2) professional and related occupations; (3) service occupations; (4) sales and related occupations; (5) office and administrative support occupations; (6) farming, fishing, and forestry occupations; (7) construction and extraction occupations; (8) installation, maintenance, and repair occupations; (9) production occupations; and (10) transportation and material moving occupations. Following existing studies that distinguish professional and managerial occupations from other occupational groups (Erikson & Goldthorpe, 1992; Goldthorpe, 1982; Li & Heath, 2016), we recode categories 1 and 2 as professional and managerial occupations, and categories 3–10 as non-professional occupations.

3.2.4 Controlled Variable

All the models control for the respondents' age (continuous), whether work from home (yes; no), weekly wage (log) (continuous), Hispanic/Latino origin (yes; no), race (White; Black; Asian; other), employment status (full-time; part-time), hourly pay status (yes; no), industry (agriculture, forestry, fishing, and hunting; mining; construction; manufacturing; wholesale and retail trade; transportation and utilities; information; financial activities; professional and business services; educational and health services; leisure and hospitality; other services; public administration), region (Northeast; Midwest; South; West), educational level (below tertiary; tertiary), partner's employment status (no partnership; no paid work; has paid work), and interview year dummies.

3.3 Analytical Strategies

The analysis in this study is presented in two parts, supported by weighted regression analyses to ensure the results are representative of the broader U.S. population.

First, the study conducts a descriptive analysis to explore all analytical variables, including dimensions of work time fragmentation and relevant sociodemographic characteristics. Using ANOVA and chi-squared tests, it assesses whether statistically significant differences exist across four groups: men without dependent children, men with dependent children, women without dependent children, and women with dependent children. This descriptive phase provides an initial overview of group-level variation and helps identify patterns that motivate and inform the subsequent inferential analyses.

Second, the study employs OLS regression models to examine the association between parenthood and work time fragmentation. These models explore how occupational class moderates these associations for men and women, offering nuanced insights into the intersection of work, family responsibilities, and social stratification.

To ensure the reliability and robustness of the results, several additional analyses are performed. First, the influence of the number of dependent children was examined, revealing no significant interaction with gender. This consistency across family sizes reinforces the reliability of the main conclusions. Second, alternative indicators of socioeconomic status, such as educational attainment and weekly wage, were incorporated into the analysis. These results reaffirm the central importance of occupational class in understanding work time fragmentation, as it encompasses both job-specific demands and broader structural dimensions, including workplace norms and labor market hierarchies. Third, generalized linear models (GLM) are estimated as an alternative specification to account for the skewed distribution of the dependent variable, and the results remain consistent with the main findings. By integrating descriptive and inferential methods with rigorous robustness checks, this study provides a comprehensive framework for examining work time fragmentation within the U.S. population.

4 Results

4.1 Descriptive Results

Table 1 provides descriptive statistics for all variables in the weighted sample, stratified by gender and parenthood into four groups: men without dependent children, men with dependent children (fathers), women without dependent children, and women with dependent children (mothers). Clear differences emerge across these groups. Mothers exhibit the highest level of density of work time fragmentation (mean = 0.65), followed by women without children (mean = 0.58). Fathers show a slightly lower value (mean = 0.58), while men without children exhibit the lowest fragmentation (mean = 0.54; $p < 0.001$). In terms of work hours, men without children work the longest days (mean = 7.68), followed by fathers (mean = 7.55) and women without children (mean = 7.18), whereas mothers report the shortest average hours (mean = 6.73; $p < 0.001$). Work-from-home arrangements also vary modestly across the four groups. Fathers are most likely to work from home (26.47%), followed by mothers (25.70%) and women without children (25.51%), while men without children are least likely to do so (23.13%; $p < 0.001$).

Socioeconomic status patterns reveal notable gender and parenthood differences. Adults without dependent children are considerably older (men: 43.87 years; women: 45.93 years) than parents (fathers: 39.02 years; mothers: 37.74 years; $p < 0.001$). Over half of non-parents are not in a partnership (men: 58.21%; women: 57.91%), whereas parents are more likely to live with a partner who has paid work (fathers: 53.93%; mothers: 55.65%; $p < 0.001$). Income measures also vary across groups. Fathers display the highest logged weekly wages (mean = 11.43), followed by men without children (11.31), women without children (11.09), and mothers (10.94; $p < 0.001$). Occupational and employment structures further distinguish between these groups. Women are more likely than men to work in professional occupa-

Table 1 Sample characteristics

Variables	Men without dependent children	Men with dependent children	Women without dependent children	Women with dependent children	Anova/ χ^2 tests
Density of work time fragmentation [a], *M* (*SD*)	0.54 (1.26)	0.58 (1.36)	0.58 (1.35)	0.65 (1.46)	$p<0.001$
Work hours [a], *M* (*SD*)	7.68 (3.09)	7.55 (3.26)	7.18 (3.04)	6.73 (3.05)	$p<0.001$
Work from home, %					$p<0.001$
Yes	23.13	26.47	25.51	25.70	
No	76.87	73.53	74.49	74.30	
Age, *M* (*SD*)	43.87 (13.18)	39.02 (9.81)	45.93 (13.16)	37.74 (9.56)	$p<0.001$
Partner's employment status, %					$p<0.001$
No partnership	58.21	14.93	57.91	36.52	
No paid work	12.18	31.14	8.96	7.84	
Has paid work	29.61	53.93	33.13	55.65	
Weekly wage (log), *M (SD)*	11.31 (0.92)	11.43 (0.93)	11.09 (0.97)	10.94 (1.01)	$p<0.001$
Occupational class, %					$p<0.001$
Non-professional	60.07	56.54	50.77	52.07	
Professional	39.93	43.46	49.23	47.93	
Employment status, %					$p<0.001$
Full-time	91.11	92.40	83.44	74.37	
Part-time	8.89	7.60	16.56	25.62	
Pay status, %					$p<0.001$
Hourly pay	52.20	45.76	53.07	57.52	
Non-hourly pay	47.80	54.24	46.93	42.48	
Education level, %					$p<0.001$
Below tertiary	49.80	48.15	43.32	46.22	
Tertiary	50.20	51.85	56.68	53.78	
Hispanic/Latino origins, %					$p<0.001$
Yes	15.48	14.97	11.53	14.30	
No	84.52	85.03	88.47	85.70	
Race, %					$p<0.001$
White	80.20	85.17	77.34	80.02	
Black	13.88	6.49	17.11	12.76	
Asian	36.46	6.09	3.61	4.70	
Other	2.25	2.25	1.94	2.50	
Region, %					$p<0.001$
Northeast	17.21	17.33	17.23	17.55	
Midwest	24.19	25.94	24.80	26.14	
South	36.46	33.71	37.09	35.92	
West	22.15	23.02	20.88	20.38	
Industry					$p<0.001$
Agriculture, forestry, fishing, and hunting	1.35	1.66	0.37	0.52	
Mining	0.77	0.97	0.10	0.15	
Construction	7.18	8.93	1.08	1.11	
Manufacturing	15.73	16.65	7.09	6.83	
Wholesale and retail trade	14.30	13.43	11.70	11.96	

Table 1 (continued)

Variables	Men without dependent children	Men with dependent children	Women without dependent children	Women with dependent children	Anova/ χ^2 tests
Transportation and utilities	8.02	6.90	2.76	2.33	
Information	2.96	3.06	2.41	1.97	
Financial activities	6.40	6.53	8.46	8.08	
Professional and business services	11.97	12.43	9.87	9.48	
Educational and health services	13.98	12.17	37.82	38.99	
Leisure and hospitality	7.10	6.91	7.09	9.25	
Other services	4.19	3.92	4.81	4.71	
Public administration	6.06	6.43	6.44	4.62	
Year, %					$p=0.084$
2003	8.53	9.03	8.69	8.91	
2004	5.37	5.91	6.13	5.89	
2005	4.84	5.98	5.40	6.01	
2006	4.94	5.85	5.07	6.31	
2007	4.78	6.14	5.29	5.71	
2008	5.21	5.69	4.87	5.86	
2009	5.12	5.35	5.25	5.99	
2010	5.27	5.56	5.18	5.87	
2011	5.04	5.10	5.13	5.36	
2012	4.90	5.08	4.78	4.96	
2013	4.70	4.59	4.41	4.74	
2014	4.73	4.64	4.78	4.70	
2015	4.43	4.31	4.51	4.41	
2016	4.53	4.35	4.33	4.01	
2017	4.36	3.89	4.05	4.03	
2018	3.81	3.80	3.94	3.59	
2019	4.32	3.53	3.75	3.27	
2020	3.71	2.90	3.39	2.91	
2021	3.82	3.40	3.87	2.92	
2022	3.61	2.52	3.51	2.38	
2023	3.99	2.38	3.66	2.17	
Number of observations	18,135	19,037	17,379	19,123	

Source. American Time Use Survey 2003–2023

Weights applied. M = Means, SD = Standard deviations, % = Proportions. [a] Top-coded at the 99th percentiles to reduce the influence of outlier cases

tions, both among those without children (women: 49.23%; men: 39.93%) and among parents (mothers: 47.93%; fathers: 43.46%; $p<0.001$). Part-time employment is most common among mothers (25.62%) and women without children (16.56%), whereas men show low part-time rates (fathers: 7.60%; non-fathers: 8.89%; $p<0.001$). Women are also more likely to hold hourly paid jobs (non-mothers: 53.07%; mothers: 57.52%) than men (non-fathers: 52.20%; fathers: 45.76%; $p<0.001$). Educational attainment is relatively high across all groups, with women without dependent children showing the highest rates of tertiary education (56.68%), followed by mothers (53.78%), fathers (51.85%), and men without chil-

dren (50.20%; $p<0.001$). Additional variation appears across race, region, and industry, with mothers concentrated in educational and health services (38.99%) and men, especially fathers, more represented in manufacturing and construction.

4.2 OLS Regressions Results

4.2.1 The Relationship Between Gender, Parenthood, and Work Time Fragmentation

According to Table 2, Model 1 shows that men experience a lower level of work time fragmentation compared to women (β = −0.015, $p<0.05$), which aligns with H1. Model 2 and Model 3 examine the association between parenthood and the density of work time fragmentation, stratified by gender. Women with dependent children have a higher level of work time fragmentation than those without coresidential children (β = 0.028, $p<0.01$), but no such difference is observed for men (β = −0.005, $p>0.05$). In Model 4, the interaction term between gender and parenthood confirms that parenthood is associated with a higher level of work time fragmentation for women than for men (β = −0.032, $p<0.01$). Further details on the models with all variables presented are provided in 6 Table 7.

Table 3 further examines the relationship of youngest child's age and work time fragmentation by gender. According to Table 3, Model 2 and Model 3 indicate that women with dependent children aged 0–4 and aged 5–11 experience a higher level of work time fragmentation than those without coresidential children (β = 0.048, $p<0.01$; β = 0.030, $p<0.05$). However, no such difference is observed for men (β = 0.009, $p>0.05$; β = −0.010, $p>0.05$). For both women and men, those with dependent children aged 12 or older do not exhibit statistically significant differences in work time fragmentation compared with those without coresidential children (β = 0.008, $p>0.05$; β = −0.012, $p>0.05$). In Model 4, the interaction terms between gender and parenthood indicate that having children aged 0–4 and 5–11 is associated with significantly higher levels of work time fragmentation for women compared to men (β = −0.038, $p<0.05$; β = −0.040, $p<0.01$). These findings align with H2a, indicating that caregiving responsibilities are more closely associated with women's work schedules, with this pattern being more pronounced for mothers of young children. Additionally, the results also support H2b, as men with dependent children do not show statistically significant differences in work time fragmentation compared with men who do not live with dependent children.

Table 2 OLS regressions examining the relationship between gender, parenthood, and the density of work time fragmentation

	Model 1 Total	Model 2 Female	Model 3 Male	Model 4 Total
Gender (ref. = Female)	−0.015*			−0.002
	(0.007)			(0.009)
Parenthood	0.010	0.028**	−0.005	0.027**
	(0.007)	(0.010)	(0.009)	(0.010)
Parenthood × Gender (ref. = Female)				−0.032**
				(0.012)
Constant	0.618***	0.773***	0.502***	0.613***
	(0.063)	(0.116)	(0.080)	(0.063)
N	73,710	36,502	37,208	73,710
R^2	0.0914	0.1035	0.0808	0.0915

Source. American Time Use Survey 2003–2023

* p<0.05, ** p<0.01, *** p<0.001; Robust standard errors in parentheses. All models control for variables in Table 1. Weights applied

Table 3 OLS regressions examining the relationship between gender, parenthood (Age of the Youngest Dependent Child in the Household), and the density of work time fragmentation

	Model 1 Total	Model 2 Female	Model 3 Male	Model 4 Total
Gender (ref. = Female)	−0.015*			−0.001
	(0.007)			(0.009)
Age of the youngest dependent child in the household (ref. = No dependent children)				
Aged 0–4	0.025*	0.048**	0.009	0.046**
	(0.010)	(0.017)	(0.012)	(0.016)
Aged 5–11	0.009	0.030*	−0.010	0.030*
	(0.008)	(0.013)	(0.011)	(0.012)
Aged over 12	−0.003	0.008	−0.012	0.006
	(0.008)	(0.012)	(0.012)	(0.012)
Age of the youngest dependent child in the household × Gender (ref. = Female)				
Aged 0–4 × Gender				−0.038*
				(0.018)
Aged 5–11 × Gender				−0.040**
				(0.015)
Aged over 12 × Gender				−0.017
				(0.016)
Constant	0.619***	0.775***	0.501***	0.614***
	(0.063)	(0.116)	(0.080)	(0.063)
N	73,710	36,502	37,208	73,710
R^2	0.0915	0.1037	0.0809	0.0917

Source. American Time Use Survey 2003–2023

*$p<0.05$, **$p<0.01$, ***$p<0.001$; Robust standard errors in parentheses. All models control for variables in Table 1. Weights applied

4.2.2 The Relationship Between Parenthood, Occupational Class, and Work Time Fragmentation by Gender

Table 4 explores how occupational class moderates the relationship between parenthood and the density of work time fragmentation. For women, parenthood is significantly associated with a higher level of work time fragmentation in professional occupations, but no significant association is found in non-professional roles. The interaction term between parenthood and occupational class ($\beta = 0.039$, $p < 0.05$) suggests that the influence of parenthood is more pronounced for women in professional roles. Additionally, this pattern reflects the already high baseline levels of fragmentation among non-professional non-mothers, indicating that the incremental association with parenthood in these occupations is less pronounced. Figures 1 and 2 further visualize these patterns. These findings support H3 and H4, showing that women in professional occupations experience greater increases in work time fragmentation after becoming parents compared to those in non-professional occupations. In contrast, men's work time fragmentation does not show statistically significant variation by parenthood status across occupational class.

Table 4 OLS regressions examining the relationship between parenthood, occupational class, and the density of work time fragmentation

	Model 1 Female	Model 2 Female	Model 3 Male	Model 4 Male
Occupational class (ref. = Non-professional)	−0.002	−0.018	−0.000	−0.004
	(0.011)	(0.014)	(0.011)	(0.013)
Parenthood	0.028**	0.010	−0.005	−0.008
	(0.010)	(0.013)	(0.009)	(0.010)
Parenthood × Occupational class (ref. = Non-professional)		0.039*		0.009
		(0.019)		(0.016)
Constant	0.773***	0.794***	0.502***	0.505***
	(0.116)	(0.116)	(0.080)	(0.080)
N	36,502	36,502	37,208	37,208
R^2	0.1035	0.1036	0.0808	0.0808

Source. American Time Use Survey 2003–2023

* $p<0.05$, ** $p<0.01$, *** $p<0.001$; Robust standard errors in parentheses. All models control for variables in Table 1. Weights applied

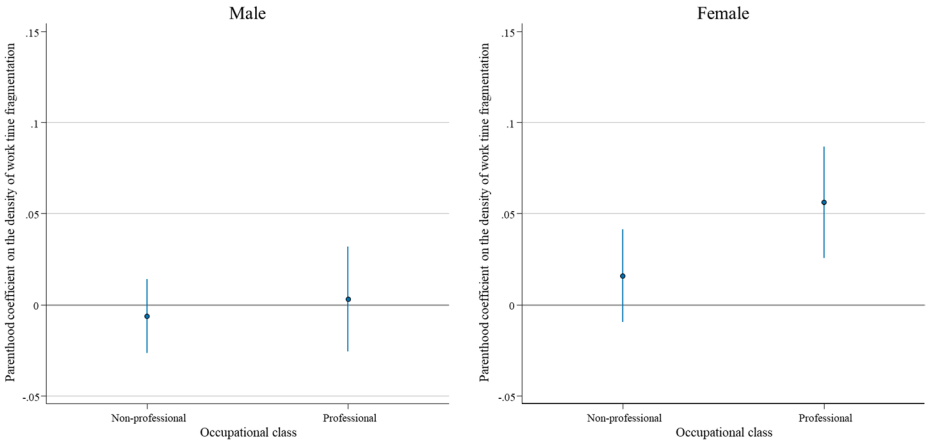

Fig. 1 Parenthood coefficient on the density of work time fragmentation by gender and occupational class

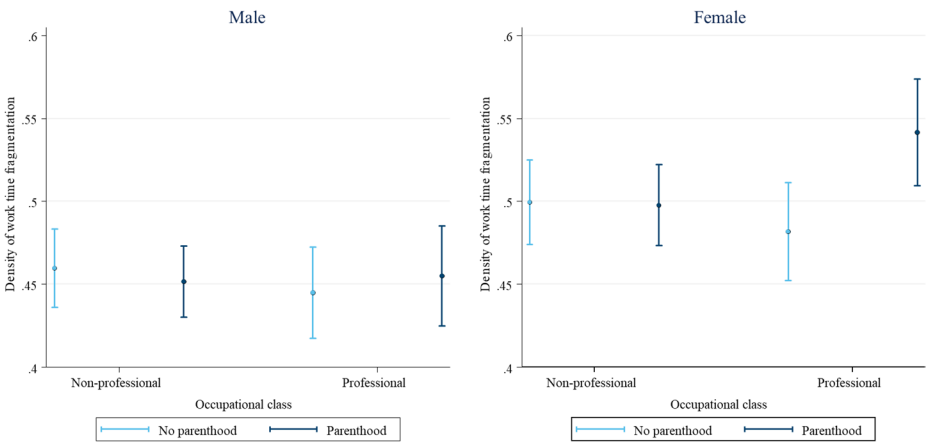

Fig. 2 Predicted density of work time fragmentation by gender and occupational class

Table 5 OLS regressions examining the relationship between parenthood (age of the youngest dependent child in the household), occupational class, and the density of work time fragmentation

	Model 1 Female	Model 2 Female	Model 3 Male	Model 4 Male
Occupational class (ref. = Non-professional)	−0.001	−0.017	−0.000	−0.004
	(0.011)	(0.014)	(0.011)	(0.013)
Age of the youngest dependent child in the household (ref. = No dependent children)				
Aged 0–4	0.048**	0.018	0.009	0.004
	(0.017)	(0.023)	(0.012)	(0.014)
Aged 5–11	0.030*	0.016	−0.010	−0.007
	(0.013)	(0.016)	(0.011)	(0.013)
Aged over 12	0.008	−0.001	−0.012	−0.020
	(0.012)	(0.014)	(0.012)	(0.014)
Age of the youngest dependent child in the household × Occupational class (ref. = Non-professional)				
Aged 0–4 × Occupational class		0.065*		0.011
		(0.031)		(0.020)
Aged 5–11 × Occupational class		0.030		−0.005
		(0.024)		(0.020)
Aged over 12 × Occupational class		0.018		0.021
		(0.025)		(0.025)
Constant	0.775***	0.795***	0.501***	0.506***
	(0.116)	(0.116)	(0.080)	(0.080)
N	36,502	36,502	37,208	37,208
R^2	0.1037	0.1039	0.0809	0.0809

Source. American Time Use Survey 2003–2023

* $p<0.05$, ** $p<0.01$, *** $p<0.001$; Robust standard errors in parentheses. All models control for variables in Table 1. Weights applied

Table 5 further explores the relationship between the age of the youngest child and work time fragmentation, moderated by occupational class and stratified by gender. Among women, those in professional occupations experience higher levels of work time fragmentation after they have children aged 0–4, compared to their counterparts in non-professional roles ($\beta = 0.065$, $p < 0.05$). In contrast, for men, these patterns do not vary significantly with the age of their children.

4.3 Robustness Checks

To validate the findings and assess their applicability to different contexts, several robustness checks are conducted to address potential concerns in the analysis and ensure the reliability of the conclusions.

First, to determine whether the observed patterns are specific to households with only one child, the moderating role of the number of dependent children in the household is

analyzed. This analysis, restricted to households with at least one child, evaluates the consistency of the main findings across families of varying sizes (see 6 Table 8). The interaction between the number of children and gender is not statistically significant, suggesting that the number of children does not substantially influence the relationship.

Second, to ensure the findings support the main conclusion regarding the moderating role of occupational class, we use educational level and weekly wage as socioeconomic status indicators (see 6 Tables 9, 10, Figs. 3, 4). The results show that for men, neither educational level nor weekly wage significantly influences the relationship between parenthood and work time fragmentation. For women, those with higher educational levels or weekly wages in the upper 50% within each interview year experience a higher level of work time fragmentation after parenthood, though the difference between higher and lower socioeconomic groups is not statistically significant. This may be because occupational class is the most comprehensive indicator of socioeconomic status for understanding work time fragmentation, as it captures both material and non-material factors, including job demands, workplace norms, and access to resources. The occupational class also accounts for the nature of the work environment, such as the "ideal worker" ethos, that directly influences work time fragmentation. Additionally, it represents the hierarchical structure of the labor market, with higher-status roles typically involving more irregular hours and greater work-family conflict, leading to greater work time fragmentation. In contrast, educational level and income do not capture these broader, job-specific factors.

Third, we estimated generalized linear models (GLMs) as an alternative specification to account for the skewed distribution of the dependent variable (see 6 Table 11). The results remain consistent with the main findings.

5 Discussion and Conclusion

Previous research on gender and parenthood differences has primarily focused on labor market outcomes and family responsibilities, often highlighting the "motherhood penalty" (England, 2005; Glauber, 2008; Zilanawala, 2016). However, work time fragmentation, a potential social indicator of work-family conflict, remains insufficiently explored. As the labor market becomes more flexible, the boundaries between work and family blur, leading to increased interruptions (Delanoeije et al., 2019; Li, 2023). This study addresses this gap by using ATUS 2003–2023 and OLS regression models to introduce work time fragmentation as a novel framework for examining labor market inequalities. It also extends research on gender and parenthood differences by exploring variations across occupational classes, offering fresh insights into work, family, and gender dynamics. Our findings offer several important insights.

First, the findings reveal significant gender and parenthood differences in work time fragmentation. The results indicate that men experience less work time fragmentation compared to women, with women, particularly those with dependent children, experiencing greater fragmentation than those without coresidential children. Additionally, this pattern is especially pronounced among mothers with young children in early childhood. However, no such differences are observed for men. These results are consistent with theories emphasizing traditional gender norms and occupational segregation, which posit that women, especially mothers, experience more frequent work disruptions related to caregiving responsibilities

and are more likely to be employed in jobs with irregular or unstable schedules (Desjardins et al., 2024; Goldin, 2015; Yucel & Chung, 2023). Prior research has also suggested that men's work schedules are primarily influenced by occupational demands, whereas women's schedules are influenced by a combination of occupation, marriage, and parenthood (Minnen et al., 2016). In light of these findings, our study contributes to ongoing debates on gender differences in work arrangements by highlighting that work time fragmentation among women is not solely driven by job characteristics but is also influenced by the intersection of family responsibilities and societal expectations. The insights deepen our understanding of how gender and parenthood intersect to influence work patterns, establishing a foundation for future research and highlighting the importance of addressing temporal inequalities to promote gender equity in work-family integration. From a policy perspective, the findings suggest that reducing gender differences in work time fragmentation requires interventions targeting both workplace structures and cultural norms around caregiving. Policies promoting flexible yet predictable work arrangements, such as the right to request schedule stability, may help mitigate excessive fragmentation, particularly for women in lower-wage or precarious employment. Additionally, expanding access to subsidized childcare, particularly during nonstandard work hours, could alleviate caregiving disruptions that disproportionately affect mothers. The results also highlight the importance of normalizing fathers' active engagement in caregiving through well-compensated, non-transferable parental leave, which has been shown to encourage men's participation in child-rearing and reduce the caregiving burden on women. Beyond formal policies, addressing workplace cultures that penalize caregiving-related interruptions or reward overwork is essential to fostering a more equitable distribution of work and family responsibilities. Lastly, tracking work time fragmentation as a metric in organizational and labor force studies may provide valuable insights into the effectiveness of such policies and highlight areas for further intervention.

Second, the findings indicate that women in higher occupational classes report greater work time fragmentation after parenthood compared to those in lower occupational classes. This pattern may reflect the blurred boundaries between work and personal life that often characterize professional roles, as well as the greater work demands and cultural expectations surrounding parenting among highly educated and professional workers (Chung & van der Horst, 2020). For men, no statistically significant differences in work time fragmentation are observed by parenthood status or occupational class. This finding is consistent with prior research suggesting that persistent gender norms and workplace expectations may limit the influence of occupational class on men's work-family dynamics (Blair-Loy & Williams, 2017; de Laat, 2023). The results also carry important implications for workplace policies and societal norms. Workplace policies should address the unique challenges faced by women in different occupational classes. For high-demand professions, employers should focus on strategies like on-site childcare and reasonable scheduling expectations to help mothers manage professional and caregiving responsibilities. For women in lower occupational classes, reduced fragmentation often reflects rigid job structures rather than genuine work-life balance. Enhancing flexibility and autonomy in these roles can improve work-life integration and create career growth opportunities. Furthermore, the consistently low fragmentation among men underscores the importance of policies that promote shared caregiving responsibilities, such as equitable parental leave and active fatherhood initiatives. Addressing these dynamics can help challenge traditional gender norms and foster inclusive, supportive workplaces.

This study has several limitations that should be addressed in future research. First, it does not distinguish between active work time fragmentation, where individuals choose to interrupt work for personal or caregiving tasks, and passive fragmentation, caused by unexpected interruptions such as household demands or childcare needs. This distinction is crucial for understanding the underlying mechanisms of work fragmentation and designing targeted interventions. Future studies could incorporate qualitative methods or detailed time-use diary analysis to better capture the nature of these interruptions. This design may understate how parenthood is related to work time fragmentation, particularly among non-professional women. Second, the analysis may understate how parenthood is related to work time fragmentation, particularly among non-professional women. Prior research indicates that women in lower-wage and inflexible occupations often face substantial challenges in reconciling work and caregiving responsibilities, which can lead to labor force withdrawal following childbirth (Chaudry, 2004; Damaske, 2011). As a result, our sample may reflect a more selective group of employed mothers in these occupations who have greater support or job flexibility, potentially shaping the observed differences. Future research could extend these findings by examining labor market exit and reentry patterns in relation to caregiving demands and occupational class. Third, the present study does not examine the experiential dimension of fragmentation, including whether individuals perceive these interruptions as empowering, burdensome, or both. Future work could draw on scholarship on switching dynamics and the stress process to better understand how individuals navigate the cognitive, emotional, and psychological consequences of frequent role transitions throughout the day (Cornwell, 2013). Fourth, although this study uses nationally representative U.S. data, the findings may not generalize to societies with different labor market institutions or family policies. Countries with stronger social welfare systems or more supportive family policies may exhibit different degrees of work time fragmentation or smaller gender and parenthood differences. Cross-national comparisons would therefore provide valuable insights into whether these patterns persist across diverse contexts and help identify policy frameworks that can promote more equitable work-family arrangements.

Appendix

Table 6 Steps of analytic sample construction

Sample description	Sample
Original sample of the American Time Use Survey (2003–2023)	N=245,139 diaries
Restrict the sample to individuals with paid work	N=150,888 diaries
Restrict the sample to workday diaries	N=88,259 diaries
Restrict the sample to respondents who completed all key questions (excluding those who are not asked or not applicable)	N=76,972 diaries
Listwise delete individuals with missing values for the variables used (4.24%)	N=73,710 diaries

Source. American Time Use Survey 2003–2023

Table 7 OLS regressions examining the relationship between gender, parenthood, and the density of work time fragmentation

	Model 1 Total	Model 2 Female	Model 3 Male	Model 4 Total
Gender (ref. = Female)	−0.015*			−0.002
	(0.007)			(0.009)
Parenthood	0.010	0.028**	−0.005	0.027**
	(0.007)	(0.010)	(0.009)	(0.010)
Parenthood × Gender (ref. = Female)				−0.032**
				(0.012)
Occupational class (ref. = Non-professional)	−0.001	−0.002	−0.000	−0.001
	(0.008)	(0.011)	(0.011)	(0.008)
Education level (ref. = Below tertiary)	0.013+	0.035**	−0.006	0.013+
	(0.007)	(0.011)	(0.009)	(0.007)
Work from home	0.528***	0.586***	0.474***	0.528***
	(0.012)	(0.019)	(0.016)	(0.012)
Pay status (ref. = Non-hourly pay)	0.007	0.016	−0.002	0.006
	(0.007)	(0.011)	(0.010)	(0.007)
Employment status (ref. = Full-time)	0.112***	0.095***	0.133***	0.111***
	(0.012)	(0.015)	(0.021)	(0.012)
Partner's employment status (ref. = No partnership)				
No paid work	0.030**	0.038*	0.034**	0.033***
	(0.010)	(0.018)	(0.012)	(0.010)
Paid work	0.014*	0.009	0.020*	0.015*
	(0.007)	(0.010)	(0.009)	(0.007)
Race (ref. = White)				
Black	−0.018*	−0.024*	−0.013	−0.019*
	(0.008)	(0.012)	(0.011)	(0.008)
Asian	−0.032*	−0.024	−0.037*	−0.031*
	(0.014)	(0.026)	(0.015)	(0.014)
Other	0.019	0.011	0.023	0.018
	(0.020)	(0.033)	(0.025)	(0.020)
Hispanic/Latino origins (ref. = No)	−0.021**	−0.026*	−0.017+	−0.021**
	(0.007)	(0.011)	(0.009)	(0.007)
Age	−0.001	0.001	−0.003	−0.001
	(0.002)	(0.003)	(0.002)	(0.002)
Age squared	0.000	−0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Income (log)	−0.026***	−0.036***	−0.014*	−0.026***
	(0.005)	(0.008)	(0.006)	(0.005)
Region (ref. = Northeast)				
Midwest	0.022*	0.020	0.024*	0.023*
	(0.009)	(0.014)	(0.012)	(0.009)
South	0.014+	0.019	0.008	0.014+
	(0.008)	(0.012)	(0.010)	(0.008)
West	0.038***	0.030*	0.041***	0.038***
	(0.009)	(0.014)	(0.012)	(0.009)
Industry (ref. = Agriculture, forestry, fishing, and hunting)				
Mining	−0.044	−0.101	−0.023	−0.045
	(0.045)	(0.122)	(0.047)	(0.045)

Table 7 (continued)

	Model 1 Total	Model 2 Female	Model 3 Male	Model 4 Total
Construction	0.030	−0.042	0.053^{+}	0.030
	(0.029)	(0.092)	(0.030)	(0.029)
Manufacturing	0.012	−0.098	0.043	0.011
	(0.027)	(0.080)	(0.027)	(0.027)
Wholesale and retail trade	−0.018	−0.132^{+}	0.018	−0.018
	(0.027)	(0.079)	(0.027)	(0.027)
Transportation and utilities	0.007	−0.061	0.022	0.006
	(0.031)	(0.099)	(0.029)	(0.031)
Information	0.010	−0.103	0.048	0.010
	(0.032)	(0.084)	(0.034)	(0.032)
Financial activities	−0.032	−0.128	−0.010	−0.033
	(0.028)	(0.080)	(0.030)	(0.028)
Professional and business services	−0.036	−0.164*	0.012	−0.037
	(0.028)	(0.080)	(0.028)	(0.027)
Educational and health services	0.005	−0.118	0.062*	0.004
	(0.027)	(0.079)	(0.030)	(0.027)
Leisure and hospitality	−0.031	−0.141^{+}	0.004	−0.032
	(0.028)	(0.081)	(0.029)	(0.028)
Other services	0.009	−0.076	0.015	0.008
	(0.030)	(0.083)	(0.030)	(0.030)
Public administration	0.030	−0.057	0.044	0.029
	(0.030)	(0.082)	(0.032)	(0.030)
Year (ref. = 2003)				
2004	−0.009	0.005	−0.020	−0.008
	(0.014)	(0.021)	(0.018)	(0.014)
2005	0.026	0.043^{+}	0.012	0.026
	(0.016)	(0.025)	(0.021)	(0.016)
2006	0.005	0.011	−0.002	0.005
	(0.015)	(0.022)	(0.019)	(0.015)
2007	0.010	−0.010	0.027	0.010
	(0.018)	(0.023)	(0.027)	(0.018)
2008	0.022	0.029	0.015	0.022
	(0.017)	(0.026)	(0.022)	(0.017)
2009	0.021	0.039	0.005	0.021
	(0.017)	(0.026)	(0.022)	(0.017)
2010	0.013	0.015	0.011	0.013
	(0.017)	(0.027)	(0.022)	(0.017)
2011	−0.021	−0.034	−0.012	−0.022
	(0.017)	(0.025)	(0.022)	(0.017)
2012	−0.012	−0.017	−0.007	−0.012
	(0.017)	(0.026)	(0.023)	(0.017)
2013	−0.014	0.002	−0.028	−0.014
	(0.017)	(0.027)	(0.022)	(0.017)
2014	−0.047***	−0.037^{+}	−0.056**	−0.047***
	(0.014)	(0.022)	(0.018)	(0.014)
2015	0.001	0.008	−0.005	0.001
	(0.021)	(0.031)	(0.027)	(0.021)

Table 7 (continued)

	Model 1 Total	Model 2 Female	Model 3 Male	Model 4 Total
2016	−0.012	−0.021	−0.008	−0.012
	(0.017)	(0.024)	(0.024)	(0.017)
2017	−0.029	−0.042	−0.021	−0.029
	(0.018)	(0.029)	(0.023)	(0.018)
2018	−0.033^{+}	−0.048^{+}	−0.022	−0.033^{+}
	(0.017)	(0.026)	(0.022)	(0.017)
2019	−0.040*	−0.065**	−0.021	−0.040*
	(0.016)	(0.024)	(0.022)	(0.016)
2020	−0.110***	−0.135***	−0.094***	−0.111***
	(0.017)	(0.027)	(0.021)	(0.017)
2021	−0.122***	−0.124***	−0.125***	−0.122***
	(0.017)	(0.027)	(0.022)	(0.017)
2022	−0.130***	−0.171***	−0.102***	−0.130***
	(0.016)	(0.024)	(0.022)	(0.016)
2023	−0.123***	−0.108**	−0.138***	−0.123***
	(0.020)	(0.036)	(0.019)	(0.020)
Constant	0.618***	0.773***	0.502***	0.613***
	(0.063)	(0.116)	(0.080)	(0.063)
N	73,710	36,502	37,208	73,710
R^2	0.0914	0.1035	0.0808	0.0915

Source. American Time Use Survey 2003-2023

* p < 0.05, ** p < 0.01, *** p < 0.001; Robust standard errors in parentheses. Weights applied

Table 8 OLS regressions examining the relationship between gender, number of dependent children in the household, and the density of work time fragmentation (sample restricted to individuals with at least one child)

	Model 1 Total	Model 2 Mother	Model 3 Father	Model 4 Total
Gender (ref. = Female)	−0.033***			−0.046
	(0.010)			(0.024)
Number of dependent children in the household	0.003	0.008	0.008	−0.001
	(0.006)	(0.007)	(0.007)	(0.009)
Number of dependent children in the household × Gender (ref. = Female)				0.007
				(0.011)
Constant	0.707***	0.579***	0.579***	0.714***
	(0.100)	(0.126)	(0.126)	(0.100)
N	38,196	19,073	19,073	38,196
R^2	0.1008	0.0870	0.0870	0.1008

Source. American Time Use Survey 2003-2023

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$; Robust standard errors in parentheses. All models control for variables in Table 1. Weights applied

Table 9 OLS regressions examining the relationship between parenthood, weekly wage, and the density of work time fragmentation

	Model 1 Female	Model 2 Male
Parenthood	−0.011	−0.007
	(0.037)	(0.051)
Weekly wage (ref. = The lower 50%)	−0.070*	−0.044
	(0.033)	(0.039)
Parenthood × Weekly wage (ref. = The lower 50%)	0.042	0.001
	(0.038)	(0.051)
Constant	0.482***	0.393***
	(0.097)	(0.062)
N	36,502	37,208
R^2	0.1026	0.0807

Source. American Time Use Survey 2003–2023

* p<0.05, ** p<0.01, *** p<0.001; Robust standard errors in parentheses. All models control for variables in Table 1. The lower 50% of weekly wage refers to individuals earning at or below the median income for each interview year, and the upper 50% refers to those earning at or above the median. Weights applied

Table 10 OLS regressions examining the relationship between parenthood, education level, and the density of work time fragmentation

	Model 1 Female	Model 2 Male
Education level (ref. = Below tertiary)	0.027*	−0.012
	(0.013)	(0.012)
Parenthood	0.017	−0.011
	(0.013)	(0.011)
Parenthood × Education level (ref. = Below tertiary)	0.021	0.015
	(0.018)	(0.015)
Constant	0.786***	0.510***
	(0.116)	(0.080)
N	36,502	37,208
R^2	0.1035	0.0808

Source. American Time Use Survey 2003–2023

* p<0.05, ** p<0.01, *** p<0.001; Robust standard errors in parentheses. All models control for variables in Table 1. Weights applied

Table 11 Generalized Linear Models (GLM) examining the relationship between gender, parenthood, and the density of work time fragmentation

	Model 1 Total	Model 2 Female	Model 3 Male	Model 4 Total
Gender (ref. = Female)	−0.039***			−0.011
	(0.012)			(0.016)
Parenthood	0.017	0.041*	−0.006	0.045**
	(0.012)	(0.017)	(0.018)	(0.016)
Parenthood × Gender (ref. = Female)				−0.058**
				(0.021)
Constant	−0.568***	−0.335+	−0.866***	−0.581***
	(0.108)	(0.172)	(0.147)	(0.108)
N	73,710	36,502	37,208	73,710
AIC	33421.4124	19278.3067	14064.5736	33408.7583
BIC	33900.2229	19712.0680	14499.3119	33896.7766

Source. American Time Use Survey 2003–2023

* $p<0.05$, ** $p<0.01$, *** $p<0.001$; Standard errors in parentheses. All models control for variables in Table 1. Weights applied

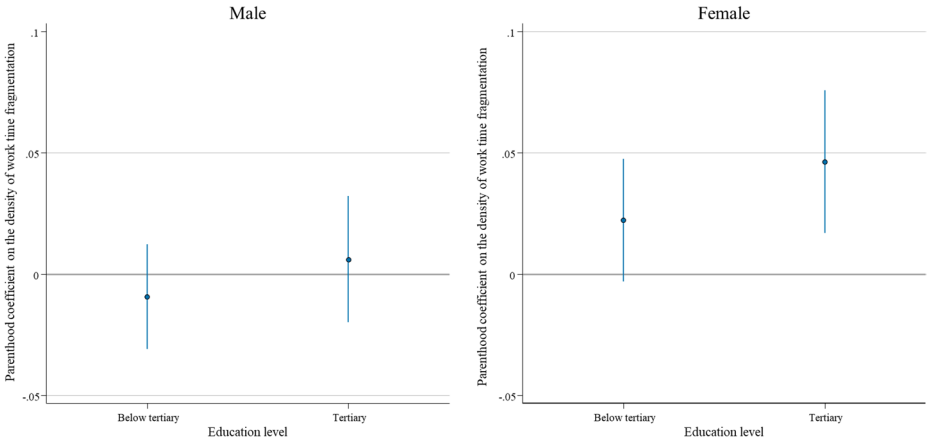

Fig. 3 Parenthood coefficient on the density of work time fragmentation by gender and education level

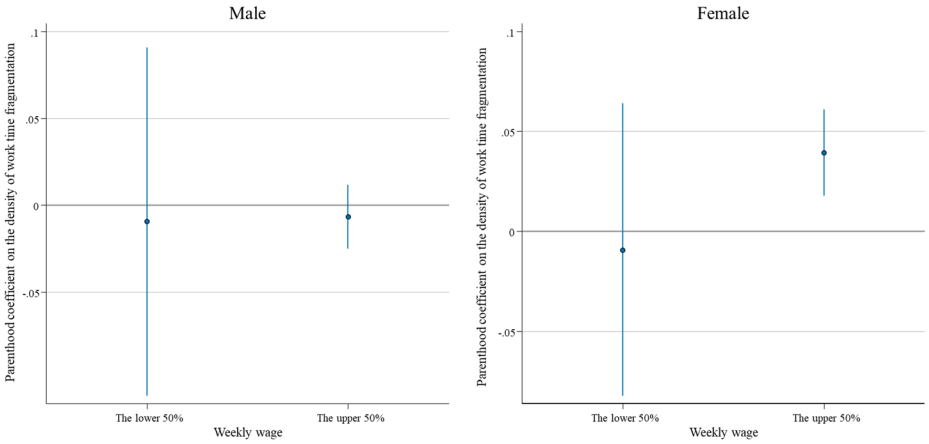

Fig. 4 Parenthood coefficient on the density of work time fragmentation by gender by weekly wage

Funding Dr Senhu Wang was funded by the Singapore Ministry of Education Tier 1 Grant (A-8002445-00-00). Dr Zhuofei Lu is a postdoctoral researcher funded by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program (awardee: Man Yee Kan; award number [771736]).

Data Availability Data is available from an open-access public depository (U.S. Bureau of Labor Statistics); see more details from: https://www.bls.gov/tus/data/datafiles-0323.htm.

Declarations

Ethical Approval Ethical approval was not needed for the present study because this study involves a routinely available, functionally anonymized, secondary dataset (with data subjects having consented to secondary research use).

Informed Consent Informed Consent was obtained from participants by American Time Use Survey; see more details from: https://www.bls.gov/tus/data/datafiles-0323.htm.

Competing interests The authors declare no competing interests.

References

Bak, V. (2022). Time is a social construct: Using time perception to mitigate time stress. *About Campus: Enriching the Student Learning Experience*, *27*(5), 4–9. https://doi.org/10.1177/10864822221138254

Beauregard, A. T. (2007). Family influences on the career life cycle. In *Career Choice in Management and Entrepreneurship: A Research Companion*. https://doi.org/10.4337/9781847208828.00011

Becker, G. S. (1991). *A treatise on the family* (Enlarged Edition.). Harvard University Press.

Bianchi, S. M., Sayer, L. C., Milkie, M. A., & Robinson, J. P. (2012). Housework: Who did, does or will do it, and how much does it matter? *Social Forces*. https://doi.org/10.1093/sf/sos120

Bittman, M., England, P., Sayer, L., Folbre, N., & Matheson, G. (2003). When does gender Trump money? Bargaining and time in household work. *American Journal of Sociology*, *109*(1), 186–214. https://doi.org/10.1086/378341

Blackburn, R. M., Jarman, J., & Siltanen, J. (1993). The analysis of occupational gender segregation over time and place: Considerations of measurement and some new evidence. *Work, Employment & Society*. https://doi.org/10.1177/095001709373001

Blair-Loy, M. (2003). *Competing Devotions: Career and Family among Women Executives*. Harvard University Press.

Blair-Loy, M., & Wharton, A. S. (2002). Employees' use of work-family policies and the workplace social context. *Social Forces, 80*(3), 813–845. https://doi.org/10.1353/sof.2002.0002

Blair-Loy, M., & Wharton, A. S. (2004). Mothers in finance: Surviving and thriving. *The Annals of the American Academy of Political and Social Science, 596*(1), 151–171. https://doi.org/10.1177/0002716204268820

Blair-Loy, M., & Williams, S. J. (2017). Devoted workers, breadwinning fathers: The case of executive men in the United States. *Fathers in Work Organizations, Berlin, Toronto: Barbara Budrich Publishers*, 41–60.

Budig, M. J., & England, P. (2001). The wage penalty for motherhood. *American Sociological Review, 66*(2), 204–225. https://doi.org/10.1177/000312240106600203

Bureau of Labor Statistics (2023). American Time Use Survey. *Inter-university Consortium for Political and Social Research*. https://doi.org/10.3886/ICPSR36268.v7

Busch, F. (2020). Gender segregation, occupational sorting, and growth of wage disparities between women. *Demography*. https://doi.org/10.1007/s13524-020-00887-3

Charmes, J. (2019). *The unpaid care work and the labour market: an analysis of time use data based on the latest world compilation of time-use surveys*.

Chaudry, A. (2004). Child Care Dynamics: 'You Have to Move Your Children Around All the Time.' *Putting Children First: How Low-Wage Working Mothers Manage Child Care* (pp. 85–118). Russell Sage Foundation.

Chung, H. (2022a). The flexibility paradox: Why more freedom at work leads to more work. *The Flexibility Paradox: Why Flexible Working Leads to (Self-)Exploitation* (pp. 69–84). Bristol University Press. https://doi.org/10.46692/9781447354796.005

Chung, H. (2022b). Introduction: The flexibility paradox and contexts. *The Flexibility Paradox: Why Flexible Working Leads to (Self-)Exploitation* (pp. 1–19). Bristol University Press. https://doi.org/10.46692/9781447354796.001

Chung, H. (2022c). Gendered flexibility paradox. In H. Chung (Ed.), *The Flexibility Paradox: Why Flexible Working Leads to (Self-)Exploitation* (pp. 105–119). Bristol University Press. https://doi.org/10.46692/9781447354796.007

Chung, H., & van der Horst, M. (2020). Flexible working and unpaid overtime in the UK: The role of gender, parental and occupational status. *Social Indicators Research, 151*(2), 495–520. https://doi.org/10.1007/s11205-018-2028-7

Chung, H., & van der Lippe, T. (2020). Flexible working, work–life balance, and gender equality: Introduction. *Social Indicators Research, 151*(2), 365–381. https://doi.org/10.1007/s11205-018-2025-x

Clausen, M., Chur-Hansen, A., Crabb, S., & Vincent, N. (2024). What does flexible work for men really mean? A qualitative content analysis of key stakeholder accounts. *Labour and Industry*, *34*(3), 339–359. https://doi.org/10.1080/10301763.2024.2420297

Coffey, D., Khera, R., & Spears, D. (2022). Mothers' social status and children's health: Evidence from joint households in rural India. *Demography*, *59*(5), 1981–2002. https://doi.org/10.1215/00703370-10217164

Cohen, P. N., & Huffman, M. L. (2007). Working for the woman? Female managers and the gender wage gap. *American Sociological Review, 72*(5), 681–704. https://doi.org/10.1177/000312240707200502

Connell, R. W. (2005). *Masculinities (2nd Edition)*. Routledge.

Cornwell, B. (2013). Switching dynamics and the stress process. *Social Psychology Quarterly*, *76*(2), 99–124. https://doi.org/10.1177/0190272513482133

Cornwell, B., Gershuny, J., & Sullivan, O. (2019). The social structure of time: Emerging trends and new directions. *Annual Review of Sociology*, *45*(1), 301–320. https://doi.org/10.1146/annurev-soc-073018-022416

Damaske, S. (2011). Pulling Back: Divergent Routes to Similar Pathways. *For the Family?: How Class and Gender Shape Women's Work* (pp. 93–119). Oxford University Press.

De Alwis, S., Hernwall, P., & Adikaram, A. S. (2022). It is ok to be interrupted; it is my job" – perceptions on technology-mediated work-life boundary experiences; a sociomaterial analysis. *Qualitative Research in Organizations and Management: An International Journal, 17*(5), 108–134. https://doi.org/10.1108/QROM-01-2021-2084

de Laat, K. (2023). Living to work (from home): Overwork, remote work, and gendered dual devotion to work and family. *Work and Occupations*. https://doi.org/10.1177/07308884231207772

Delanoeije, J., Verbruggen, M., & Germeys, L. (2019). Boundary role transitions: A day-to-day approach to explain the effects of home-based telework on work-to-home conflict and home-to-work conflict. *Human Relations*, *72*(12), 1843–1868. https://doi.org/10.1177/0018726718823071

Desjardins, C., Fortin, M., Ohana, M., & German, H. (2024). Women's double penalty during telework: A mixed method investigation of the gender effect of interruptions between work and childcare. *Group & Organization Management*. https://doi.org/10.1177/10596011241273336

England, P. (2005). Gender inequality in labor markets: The role of motherhood and segregation. *Social Politics: International Studies in Gender, State & Society, 12*(2), 264–288. https://doi.org/10.1093/sp/jxi014

England, P., & Srivastava, A. (2013). Educational differences in US parents' time spent in child care: The role of culture and cross-spouse influence. *Social Science Research*, *42*(4), 971–988. https://doi.org/10.1016/j.ssresearch.2013.03.003

England, P., Levine, A., & Mishel, E. (2020). Progress toward gender equality in the united States has slowed or stalled. *Proceedings of the National Academy of Sciences*, *117*(13), 6990–6997. https://doi.org/10.1073/pnas.1918891117

Erikson, R., & Goldthorpe, J. H. (1992). *The Constant Flux. A Study of Class Mobility in Industrial Societies*. Clarendon Press.

Fuller, S., & Hirsh, C. E. (2019). Family-friendly" jobs and motherhood pay penalties: The impact of flexible work arrangements across the educational spectrum. *Work and Occupations, 46*(1), 3–44. https://doi.org/10.1177/0730888418771116

Gangl, M., & Ziefle, A. (2009). Motherhood, labor force behavior, and women's careers: An empirical assessment of the wage penalty for motherhood in Britain, Germany, and the united States. *Demography*, *46*(2), 341–369. https://doi.org/10.1353/dem.0.0056

Gaunt, R., Jordan, A., Tarrant, P., Chanamuto, N., Pinho, M., & Wezyk, A. (2022). Caregiving dads, breadwinning mums: Transforming gender in work and childcare.

Gerson, K. (2009). *The Unfinished Revolution: How a New Generation is Reshaping Family, Work, and Gender in America*. Oxford University Press.

Gerstel, N., & Clawson, D. (2015). Inequality in work time: Gender and class stratify hours and schedules, flexibility, and unpredictability in jobs and families. *Sociology Compass, 9*(12), 1094–1105. https://doi.org/10.1111/soc4.12332

Gilbert-Ouimet, M., Brisson, C., & Vézina, M. (2020). Psychosocial work stressors, high family responsibilities, and psychological distress among women: A 5-year prospective study. *American Journal of Industrial Medicine*. https://doi.org/10.1002/ajim.23070

Glass, J. (2004). Blessing or curse? *Work and Occupations*, *31*(3), 367–394. https://doi.org/10.1177/0730888404266364

Glauber, R. (2008). Race and gender in families and at work. *Gender & Society*, *22*(1), 8–30. https://doi.org/10.1177/0891243207311593

Glavin, P., Schieman, S., & Reid, S. (2011). Boundary-spanning work demands and their consequences for guilt and psychological distress. *Journal of Health and Social Behavior*. https://doi.org/10.1177/0022146510395023

Goldin, C. (2015). *Hours flexibility and the gender gap in pay*. Center for American Progress.

Goldthorpe, J. (1982). On the Service Class, Its Formation and Future. In A. Giddens & G. Mackenzie (Eds.), *Classes and the Division of Labor: Essays in Honor of Ilya Neustadt* (pp. 162–185). Cambridge University Press.

Greenhaus, J. H., & Allen, T. D. (2011). Work–family balance: A review and extension of the literature. *Handbook of occupational health psychology, 2nd ed* (pp. 165–183). American Psychological Association. https://doi.org/10.1037/10474-000

Hochschild, A. R., & Machung, A. (1989). *The second shift: Working parents and the revolution at home*. Viking.

Ishizuka, P., & Musick, K. (2021). Occupational inflexibility and women's employment during the transition to parenthood. *Demography*. https://doi.org/10.1215/00703370-9373598

Kan, M.-Y., & Laurie, H. (2018). Who is doing the housework in Multicultural Britain? *Sociology, 52*(1), 55–74. https://doi.org/10.1177/0038038516674674
Kelly, E. L., Moen, P., & Tranby, E. (2011). Changing workplaces to reduce work-family conflict. *American Sociological Review, 76*(2), 265–290. https://doi.org/10.1177/0003122411400056
Kim, Y., & Cho, S. (2020). Socioeconomic status, work-life conflict, and mental health. *American Journal of Industrial Medicine*, *63*(8), 703–712. https://doi.org/10.1002/ajim.23118
Kolpashnikova, K., & Kan, M.-Y. (2021). Gender gap in housework time: How much do individual resources actually matter? *The Social Science Journal,* (1), 19. https://doi.org/10.1080/03623319.2021.1997079
Kossek, E. E., & Lautsch, B. A. (2018). Work–life flexibility for whom? Occupational status and work–life inequality in upper, middle, and lower level jobs. *Academy of Management Annals, 12*(1), 5–36. https://doi.org/10.5465/annals.2016.0059
Li, S. (2023). The gig economy and labour market dynamics. *Advances in Economics Management and Political Sciences*, *61*(1), 275–281. https://doi.org/10.54254/2754-1169/61/20231285
Li, Y., & Heath, A. (2016). Class matters: A study of minority and majority social mobility in Britain, 1982–2011. *American Journal of Sociology*, *122*(1), 162–200. https://doi.org/10.1086/686696
Lu, Z. (2024). Can work time fragmentation influence workers' subjective time pressure? The roles of gender and parenthood. *Sociology*, *58*(1), 194–212. https://doi.org/10.1177/00380385231166893
Lu, Z., Wang, S., Li, Y., Liu, X., & Olsen, W. (2023). Who gains mental health benefits from work autonomy? The roles of gender and occupational class. *Applied Research in Quality of Life*, *18*(4), 1761–1783. https://doi.org/10.1007/s11482-023-10161-4
Lyness, K. S., & Judiesch, M. K. (2008). Can a manager have a life and a career? International and multi-source perspectives on work-life balance and career advancement potential. *Journal of Applied Psychology, 93*(4), 789–805. https://doi.org/10.1037/0021-9010.93.4.789
Lyonette, C., Crompton, R., & Wall, K. (2007). Gender, occupational class and work-life conflict. *Community Work & Family, 10*(3), 283–308. https://doi.org/10.1080/13668800701456245
Merz, J., Böhm, P., & Burgert, D. (2009). Timing and fragmentation of daily working hours arrangements and income inequality – An earnings treatment effects approach with German time use diary data. *Electronic International Journal of Time Use Research, 6*, 200–239. https://doi.org/10.13085/eIJTUR.6.2.200-239
Minnen, J., Glorieux, I., & van Pieter, T. (2016). Who works when? Towards a typology of weekly work patterns in Belgium. *Time & Society*, *25*(3), 652–675. https://doi.org/10.1177/0961463X15590918
Moen, P., Robison, J., & Fields, V. (1994). Women's work and caregiving roles: A life course approach. *Journal of Gerontology*, *49*(4), S176–S186. https://doi.org/10.1093/geronj/49.4.S176
ONS. (2024). Female employment rate (aged 16 to 64, seasonally adjusted) May 2024. *Labour market statistics time series (LMS)*. Office for National Statistics.
Oostendorp, R. H. (2009). Globalization and the gender wage gap. *World Bank Economic Review, 23*(1), 141–161. https://doi.org/10.1093/wber/lhn022
Peetz, D. (2019). Flexibility, the 'gig economy' and the employment relationship. *The Realities and Futures of Work* (pp. 141–178). ANU Press.
Rahkonen, O. (2006). Job control, job demands, or social class? The impact of working conditions on the relation between social class and health. *Journal of Epidemiology and Community Health, 60*(1), 50–54. https://doi.org/10.1136/jech.2005.035758
Raley, S., Bianchi, S. M., & Wang, W. (2012). When do fathers care? Mothers' economic contribution and fathers' involvement in child care. *American Journal of Sociology*. https://doi.org/10.1086/663354
Sahni, S., Kaushal, L. A., & Gupta, P. (2025). Gendered differences and strategies for work-life balance: Systematic review based on social ecological framework perspective. *Acta Psychologica*, *256*, 105019. https://doi.org/10.1016/j.actpsy.2025.105019
Savage, M., Devine, F., Cunningham, N., Taylor, M., Li, Y., Hjellbrekke, J., et al. (2013). A new model of social class? Findings from the bbc's great British class survey experiment. *Sociology*, *47*(2), 219–250. https://doi.org/10.1177/0038038513481128
Schieman, S., Glavin, P., & Milkie, M. A. (2009). When work interferes with life: Work-Nonwork interference and the influence of work-Related demands and resources. *American Sociological Review*, *74*(6), 966–988. https://doi.org/10.1177/000312240907400606
Suleiman, A. O., Decker, R. E., Garza, J. L., Laguerre, R. A., Dugan, A. G., & Cavallari, J. M. (2021). Worker perspectives on the impact of non-standard workdays on worker and family well-being: A qualitative study. *Bmc Public Health*, *21*(1), 2230. https://doi.org/10.1186/s12889-021-12265-8
Sullivan, O. (2011). An end to gender display through the performance of housework? A review and reassessment of the quantitative literature using insights from the qualitative literature. *Journal of Family Theory & Review*, *3*(1), 1–13. https://doi.org/10.1111/j.1756-2589.2010.00074.x
Sullivan, O., & Gershuny, J. (2017). Speed-Up society? Evidence from the UK 2000 and 2015 time use diary surveys. *Sociology*, *52*(1), 20–38. https://doi.org/10.1177/0038038517712914

Swinkels, J., van Tilburg, T., Verbakel, E., & van Broese, M. (2019). Explaining the gender gap in the caregiving burden of partner caregivers. *The Journals of Gerontology: Series B*, *74*(2), 309–317. https://doi.org/10.1093/geronb/gbx036

Tverdostup, M. (2023). COVID-19 and gender gaps in Employment, Wages, and work hours: Lower inequalities and higher motherhood penalty. *Comparative Economic Studies*, *65*(4), 713–735. https://doi.org/10.1057/s41294-022-00198-z

West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender and Society*, *1*(2), 125–151. http://www.jstor.org/stable/189945

Williams, J. C. (2006). *One sick child away from being fired: When opting out is not an option*. Center for Work Life Law.

Williams, J. C., Blair-Loy, M., & Berdahl, J. L. (2013). Cultural schemas, Social Class, and the flexibility stigma. *Journal of Social Issues, 69*(2), 209–234. https://doi.org/10.1111/josi.12012

Xue, B., & McMunn, A. (2021). Gender differences in unpaid care work and psychological distress in the UK Covid-19 lockdown. *PLoS One, 16*(3), Article e0247959. https://doi.org/10.1371/journal.pone.0247959

Yucel, D., & Chung, H. (2023). Working from home, work–family conflict, and the role of gender and gender role attitudes. *Community Work & Family*, *26*(2), 190–221. https://doi.org/10.1080/13668803.2021.1993138

Zerubavel, E. (1985). *Hidden rhythms: Schedules and calendars in social life*. University of California Press.

Zhou, M., Wu, Y., & Kan, M. Y. (2025). Using time use data to investigate gender inequalities: Enduring patterns and new dimensions. *Sociology Compass*. https://doi.org/10.1111/soc4.70132

Zilanawala, A. (2016). Women's time poverty and family structure. *Journal of Family Issues*, *37*(3), 369–392. https://doi.org/10.1177/0192513X14542432

Zucchermaglio, C., & Talamo, A. (2000). The social construction of work times. *Time & Society*, *9*(2–3), 205–222. https://doi.org/10.1177/0961463X00009002004