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# Using Time Use Data to Investigate Gender Inequalities: Enduring Patterns and New Dimensions

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## ABSTRACT

Research on the gender revolution highlights the slowing convergence between men and women in paid and unpaid work time. This review considers both seminal studies from the 2000s and more recent analyses, drawing on comparative time-diary data, to assess progress in narrowing gender gaps in paid work and unpaid domestic work, and to outline future research directions in light of shifting family structures, flexible working arrangements, and evolving norms of parenthood and care. Time-use diaries, long central to the study of gender inequality, consistently reveal women's disproportionate share of unpaid domestic work. Historically, such data were concentrated in Western industrialized societies. Recent developments, however, extend harmonization to East Asia, including Japan, Korea, Taiwan, and China, thereby broadening the comparative framework. The expanding availability of time-use data creates important opportunities to examine cross-national differences in paid and unpaid work, and to investigate how policies and cultural norms may shape gender equality. Beyond employment and domestic labour, these data reveal disparities in leisure, rest, and caregiving, the effects of family structures and life events, and the implications of flexible working. Future research should also consider under-explored groups—such as children, adolescents, and older people—and the sequencing of daily activities.

## 1 | Introduction

In recent years, debates on the progress of the gender revolution in the division of labour have increasingly focussed on the slowing pace of convergence in paid and unpaid work time. This concern was notably raised in Paula England's 2010 analysis of the 'uneven' and 'stalled' gender revolution in the United States (England 2010), followed by a review extending the evidence to 2018 (England et al. 2020). Both reviews concluded that the progress toward gender equality showed signs of stagnation. Similarly, cross-national and longitudinal studies have fuelled debate about the trajectory of the gender revolution. Some scholars argue that gender gaps in work time continued to narrow across most European and Anglophone countries between the 1970s and 2000s (Kan et al. 2011; Altintas and Sullivan 2017). Others, drawing on more recent data from the 2010s

and incorporating East Asian societies, contend that overall progress has stalled (Kan et al. 2022).

Against this backdrop, we review the latest research on gendered time use, drawing on comparative time-use data from multiple countries. The review primarily considers studies published since 2010, covering the period from the early 1990s to the present. Our aim is to assess the current state of convergence in gendered time use and to explore possible future directions, taking into account recent developments such as flexible working arrangements, evolving family structures, and changing understandings of parenthood and outsourcing.

Time-use data (Robinson 2002; Kan 2024), have long been a vital resource for examining patterns and trends in gender inequality (Kan and Wang 2025). Worldwide, women continue to undertake

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a disproportionate share of unpaid domestic work compared with men (Hanna et al. 2023). Time-use research typically employs two types of data: (1) diary-based data, which record daily activities in 10- or 15-min intervals over a sampled day; and (2) stylized time-use data, which ask respondents to report their usual hours spent on specific activities over a day or week, such as usual weekly paid work or housework hours in social surveys. Stylized time-use data tend to be less accurate than time-diary data, especially when it comes to measuring the time spent on housework and caregiving (Robinson and Gershuny 1994; Kan 2008; Kan and Pudney 2008). Historically, however, time diary data have been collected primarily in Western industrialized societies such as US, UK, Canada, France, Germany, and Australia (Bauman et al. 2019; Kan 2024). Consequently, much of the research on long-term progress in gender equality has focussed on Western countries (Lachance-Grzela and Bouchard 2010; Kan and Wang 2025), reflecting the greater availability of datasets through national archives and international harmonization initiatives (Bauman et al. 2019).

In recent years, efforts have been made to harmonise data from non-Western societies, particularly in East Asia (see e.g. Kan et al. 2022; Kan and Zhou 2026), and these sources are now increasingly accessible to researchers. East Asian societies including Japan, Korea and Taiwan have a long history of collecting time diary data. In addition, China has also conducted national time use surveys in 2008, 2018, and 2024.

Few South and Southeast Asian countries have collected time use data, with the notable exceptions of Vietnam, India and Kyrgyzstan (Kolpashnikova and Kan 2020a). Such data remain limited across much of the Global South. Recognising the importance of time-use data in capturing unpaid care work and its contribution to social and economic development, the United Nations and the International Labour Organization have encouraged the collection of such data in non-Western contexts, particularly in the Global South (UN PARIS21 Women 2024; International Labour Organization 2021, 2023).

This article highlights the research opportunities presented by the growing availability of time-use data, especially those collected through the diary methods. We also include in our review life course research that employs longitudinal stylised time-use data, as such data allow for improved estimation of causal relationships. We first emphasise the value of time diary data in enabling cross-national comparisons of trends in gender inequality and in tracking the narrowing of gender gaps in paid and unpaid domestic work. We argue that this established line of inquiry merits sustained attention and more systematic monitoring in future research. We then stress the importance of comparative studies, particularly those that include non-Western contexts, such as East Asian countries, alongside Western nations. Such perspectives reveal how policy frameworks and cultural norms can both enable and constrain progress towards gender equality.

We also underline the potential of time-use data for examining gender disparities in other domains of daily life, including leisure, sleep, and rest, as well as variations across the life course. Particular attention is given to the impact of major life events, such as marriage and childbirth, on men's and women's

allocation of time, and to newer family forms, including same-sex and different-sex couples, and single- and two-parent families. We then examine the time-use patterns of children, adolescents, and older people, emphasising the need to investigate how gender intersects with other socio-economic factors within these under-researched groups. We further discuss recent evidence on the effects of intensive parenting norms on caregiving, and consider how the expansion of flexible working arrangements and the outsourcing of housework may be reshaping patterns of time use for women and men. We also note the underutilisation of sequence analysis in time-use research for exploring gender dynamics in family life. Finally, we conclude by outlining key directions for future studies on gender inequalities in time use.

## 2 | Trends in the Gendered Division of Labour

One of the most valuable uses of time-use data is to track progress in gender equality by examining the narrowing of gender gaps in paid and unpaid work. Research using time-diary data in developed countries has quantified the extent of gender inequalities within households. Studies conducted from the 1970s through the early 2000s consistently illustrated that women bear a significantly greater share of domestic responsibilities across various industrialized countries, including Australia, Austria, the United Kingdom, the United States, France, Finland, Germany, Norway, and Italy, although men's participation in domestic tasks has also gradually increased. Despite broader societal shifts toward gender equality, traditional gender roles within domestic contexts have largely persisted (Altintas and Sullivan 2016, 2017; Baxter 2002; Kan et al. 2011; Kan et al. 2022).

However, the gender gap in domestic labour gradually narrowed during this period, primarily driven by substantial increases in women's educational attainment and labour market participation. As more women engaged in paid employment, their allocation of time to paid work rose, correspondingly reducing their allocation to unpaid domestic tasks. Simultaneously, men's involvement in domestic labour showed modest yet measurable growth, partly resulting from reductions in their paid working hours. Nevertheless, men's contributions remain relatively limited compared to the significant changes observed in women's time-use patterns (Bianchi et al. 2000; England 2010; England et al. 2020; Kan et al. 2011; Sayer 2005).

More recent scholarship highlights a notable slowdown in progress toward gender equality in domestic labour since the early 2000s. Analysing time-use data from 12 Western nations (including the UK, US, Austria, Canada, Denmark, Finland, Norway, Italy, and Spain) and four East Asian societies (China, Japan, South Korea, and Taiwan) between the 1980s and 2010s, Kan et al. (2022) identified a significant stalling of convergence since approximately 2010 in most of the countries studied. The exceptions are countries whose public policies follow the Conservative welfare regime, such as France, Germany and Austria, where the gender gaps in paid and unpaid work have continued to narrow. By contrast, countries that rely heavily on the family as a key source of care provision, such as Korea, Japan and Italy, exhibit the largest gender gaps in paid and unpaid work time,

with convergence occurring only very slowly or having stalled altogether (ibid.).

Regarding total combined paid and unpaid domestic work, earlier studies argued that men and women undertake roughly equal amounts (Craig 2007; Sullivan et al. 2018). However, more recent research indicates that women consistently perform more total work than men in both East Asian and Western societies, with the gender gap in daily total work ranging from 30 min to 2 h (Kan et al. 2022). Consequently, women typically experience less free time compared to men (Kan et al. 2022; Sayer 2005).

This plateau in progress underscores the ongoing challenges of achieving equality in household labour distribution. Scholars argue that gender equality in time use evolves through two distinct phases. In the first phase, women increase their participation in the labour market, thereby reducing time spent on domestic tasks. Transitioning to the second phase requires broader societal adoption of more gender-egalitarian values and practices (Kan and Kolpashnikova 2021), specifically necessitating greater involvement by men in domestic responsibilities (Goldscheider et al. 2015).

Furthermore, cultural norms and institutional frameworks significantly shape gendered patterns of paid employment and unpaid domestic labour. Societies characterized by strong adherence to traditional family roles and gender expectations experience greater resistance to change. Gender segregation in specific domestic tasks further complicates efforts toward equality (Kan and Gershuny 2010; Kan et al. 2011; Kan et al. 2022). Across numerous industrialized nations, including the UK, US, France, Germany, Norway, Japan, and China, domestic responsibilities remain distinctly divided along gender lines. Women predominantly manage routine tasks such as cooking, cleaning, laundry, and caregiving, whereas men typically undertake less routine activities like home maintenance, gardening, and shopping (Altintas and Sullivan 2017; Herzog 2025; Hook 2010; Kan et al. 2011; Kan and Gershuny 2010; Kan and He 2018).

Yet research on the gender division of labour using time-diary data still predominantly focuses on European and Anglophone countries. Recent scholarship has expanded to include East Asian societies within comparative frameworks, uncovering more pronounced gendered patterns in trends of time use. Kan et al. (2022) found that gender gaps in paid and unpaid work time are most significant in Japan and Korea. From the 1980s to the 2010s, the trends toward convergence in these countries resembled patterns observed in societies emphasizing kinship and family as primary sources of care, such as Italy and Spain. Conversely, gender gaps in China and Taiwan are comparatively smaller within East Asia, with convergence trends resembling those observed in liberal welfare regimes where the state provides limited public care support, such as the US, UK, and Canada (Kan et al. 2022). In East Asian societies, paid work hours are long, particularly for men (Zhou et al. 2023; Nagase and Brinton 2017). Additionally, policies to support work-life balance have only been introduced in recent years (Ji et al. 2017; Kim et al. 2022; Mun and Brinton 2017), resulting in comparatively larger gender gaps in paid and unpaid work time than in Western countries.

The slow pace of narrowing gender gaps, particularly in traditionally female-associated tasks, reflects entrenched cultural norms and expectations resistant to broader societal changes (Altintas and Sullivan 2017; Guppy and Luongo 2015). Addressing these deeply rooted factors requires policymakers to devise targeted strategies that directly challenge traditional gender norms and institutional practices, thereby maintaining momentum toward genuine gender equality in domestic labour.

As the above review shows, the patterns and pace of narrowing gender gaps in paid work, unpaid work, and total work time vary across countries, including both East Asian and Western societies. This line of inquiry warrants continued attention.

### 3 | Time Use Data for Life Course Research

Time use patterns evolve throughout an individual's life. Significant events such as marriage, parenthood, divorce, widowhood, entry or exit from the labour market, retirement, and illness can markedly alter our social identities and how we structure our daily routines. While numerous time-use studies adopt a life-course perspective, most remain descriptive, comparing different individuals at distinct life stages (Craig 2008, 2006a). This is largely due to a lack of longitudinal data that consistently tracks the same individuals over extended periods, recording their daily activities with the detailed precision provided by time-diary methods. The cross-sectional nature of time-diary data complicates efforts to ascertain true comparability among people in different life situations, such as parents versus non-parents or employed versus unemployed individuals, even when controlling for multiple variables.

Consequently, studies investigating causal relationships between significant life events and time allocation typically rely on stylized questionnaire-based survey data to examine changes in time use before and after these events (Kan 2024; Kan and Wang 2025). Although such data are less precise and accurate than time-diary methods (Kan 2008; Kan and Pudney 2008), they facilitate longitudinal analysis and support advanced quantitative methods to establish causality between life events and shifts in time use. Most of these studies focus on family formation processes and employ individual fixed-effects models to measure within-individual changes. Given prevalent gender-specific expectations in many societies, a plausible hypothesis is that family formation differently influences women's and men's time use (Brinton and Lee 2016).

Research consistently indicates that marriage reinforces gendered divisions of labour. Studies using longitudinal data from the US found increased working hours for both men and women post-marriage (Astone et al. 2010; Killewald and Gough 2013). Similarly, a UK study from 1994 to 2005 observed an increase in paid working hours for both genders in the year following marriage (Kan and Gershuny 2009). Following marriage, women typically undertake more housework, whereas men's contributions generally remain unchanged (Hersch and Stratton 2000; Pollmann-Schult 2011). Studies from Germany and the US support this, demonstrating that marriage increases women's domestic labour without affecting men's (Pollmann-

Schult 2011; Gupta 2007; Hersch and Stratton 2000). However, Zhou and Kan (2019), (2023) note a reduction in gender-based differences in the impact of partnership formation on paid and unpaid labour hours in Great Britain during the 2010s, suggesting an evolution in how marriage reinforces traditional gender roles.

Childbirth and childrearing represent even more significant family formation events. Motherhood significantly increases women's unpaid labour while reducing their paid working hours consistently across countries, including China (Mu and Xie 2016), Australia (Argyrous et al. 2017; Baxter et al. 2008), the UK (Zhou and Kan 2023), the United States (Y. Lu et al. 2017), and Germany (Kühhirt 2012). A British study tracking women who became mothers in the 1990s, 2000s, and 2010s revealed, surprisingly, that the negative impact of childbirth and childrearing on women's paid labour hours remained stable and significant (Zhou and Kan 2023). In contrast, parenthood's effect on men's time use is generally less pronounced and more variable (Craig and Mullan 2010; Koslowski 2011; Schober 2013). Evidence from Australian panel data revealed that childbirth is more strongly associated with women's feeling of time pressure and decline in mental health than men's (Ruppanner et al. 2019). Despite family policies promoting gender equality in parental leave, supportive workplace practices, and a broad societal commitment to gender equality, the substantial demands of childrearing continue to be a primary factor sustaining gender disparities in time use during prime working years in industrialized societies.

#### 4 | Gendered Time Use in Newer Family Forms

Time diary data are valuable for comparing gender inequalities in conventional as well as newer family forms, such as between single- and two-parent families, and between same-sex and different-sex couples.

Using Australian data, Craig and Churchill (2021) compare the unpaid work and care experiences of lesbian, gay, and bisexual couples versus heterosexual couples, and single versus partnered mothers during the COVID-19 lockdown. They argue that while theories of the domestic division of labour are less relevant to single mothers, such frameworks nevertheless highlight women's continuing responsibility for housework and childcare. Their findings indicate that, unlike partnered mothers, single mothers reported improved wellbeing in balancing paid and domestic work—possibly due to greater flexibility and the absence of partnership conflict.

Craig and Churchill (2021) also show that same-sex couples, both before and during the pandemic, consistently reported a fairer division of unpaid work than different-sex couples. They further reveal distinctions between different types of same-sex partnerships: gay couples place less emphasis on unpaid labour, are less likely to express dissatisfaction with its division, and are more inclined to outsource household tasks. Nevertheless, across all couple types, men and women continue to 'do gender' in relation to domestic work.

Drawing on American Time Use Survey data, Hofmarcher and Plug (2022) examine specialization patterns in same- and different-sex couples. They find that specialization is generally less marked among same-sex couples, while earnings potential (measured by hourly wages) is more strongly linked to specialization in different-sex households, particularly in traditional male-breadwinner/female-homemaker arrangements. Among dual-earner couples, higher earners devote more time to paid work and less to domestic labour regardless of sexuality, suggesting that comparative advantage operates similarly across groups. Tentative evidence also points to greater specialization among gay than lesbian couples, although small sample sizes limit statistical significance. The study underscores the relevance of comparative advantage while acknowledging data constraints and its omission of task type.

Fischer (2024) likewise uses American Time Use Survey diaries to explore the relationship between paid work, earnings, and housework, distinguishing between feminine, masculine, and gender-neutral tasks. Paid work time is negatively associated with housework for both men and women in same-sex couples, but earnings predict housework only for men in such couples. For men, relative resources theory appears more applicable in same-sex than in different-sex partnerships, while patterns among women are more complex. Overall, Fischer (2024) suggests that specialization within same-sex couples may be greater than previously recognised.

#### 5 | Emerging Parenting Norms

A key factor in the persistence of gender gaps in domestic labour is the rising expectation of childcare responsibilities, which disproportionately falls on women. Time-use data can capture the growth of parental norms and child-centredness by measuring both the amount and the quality of time that parents devote to childcare. The way society constructs notions of childhood and parenthood has significantly influenced children's lives. Increasing societal expectations for parents to dedicate more time to their children's development—driven by modern ideals of good parenting (Hays 1996; Lareau 2011; Minnotte 2023)—have transformed the ways mothers, fathers, and children allocate their time. Although there has been a notable rise in men's involvement in childcare over recent decades (Altintas and Sullivan 2017), mothers continue to dedicate either increasing or stable amounts of time to childcare (Wray et al. 2021). Research based on US data has shown that there is a gender difference in parenting norms, with women placing spending more time and placing more emphasis on 'quality' interactive types of childcare such as playing and talking to children (Milkie et al. 2010). Consequently, there is only limited compensation in childcare time between spouses (Borràs et al. 2021), resulting in a modest reduction of the gender gap in childcare (Henz 2019; Steinbach and Schulz 2022).

Research further demonstrates that parents with higher educational attainment tend to spend more time with their children (Gracia and Ghysels 2017), especially engaging in structured and planned activities—known as concerted

cultivation—and particularly on weekends (Gupta et al. 2021). This educational gradient in childcare is observed across diverse societies, including Australia (Craig 2006b), China (Mu and Hu 2023; Z. Zhang et al. 2019), Japan (Hertog and Zhou 2021), the UK (Henz 2019), the US (Altintas 2016; England and Srivastava 2013), and other Western societies (Dotti Sani and Treas 2016). Recent studies indicate that the educational gap in childcare time between mothers with and without a university degree is narrowing (Prickett and Augustine 2021). This shift likely reflects increased utilisation of formal childcare by university-educated mothers, while mothers without a university education are dedicating more time to active childcare themselves (Craig and Powell 2013). In an US study, fathers without a college degree are more likely to feel stressed about work life balance if they spend more time on routine childcare (Milkie et al. 2010). Thus, beyond the gendered dimensions of parenting, social class differences in parenting practices also highlight how economic resources, societal expectations, and cultural values distinctly shape the parenting experiences and childhoods across different socioeconomic backgrounds.

## 6 | Children's Time Use

Time-use data also make it possible to investigate gender socialization by examining how boys and girls allocate their time. Recent research has explored children's time use from their own perspectives, particularly examining how they spend time with parents and others, with a focus on differences across socioeconomic backgrounds and their engagement with digital devices. The allocation of children's time is strongly linked to their cognitive and non-cognitive developmental outcomes (Faircloth 2023; Hu and Mu 2020; Ojala et al. 2021; Zhou and Ding 2023).

Analysing longitudinal data from Finland, Ojala et al. (2021) found that time spent with fathers significantly increases children's likelihood of achieving tertiary education, notably among those whose fathers have lower educational attainment. Since most time-diary data are collected from individuals aged 10 to 15 or older, the majority of studies concentrate on adolescents. A cross-country comparative study has highlighted distinct patterns in the time use of children aged 10 to 17 in Finland, Spain, and the United Kingdom (Gracia et al. 2020). In Finland and the UK, children spend more time with peers and others than with their parents, while the opposite pattern is observed in Spain. Furthermore, Finnish children spend significantly more time alone compared to their counterparts in the UK and Spain.

As might be expected, children whose parents have higher education levels consistently spend more time engaged in educational activities across both Western and East Asian societies (Altintas 2016; Gracia et al. 2020; Hertog and Zhou 2021). Parental separation notably leads to increased time spent with mothers, decreased participation in educational activities, and greater negative effects on boys than girls (Cano and Gracia 2022).

Digital screen time has risen significantly over recent decades (Mullan 2019) and continues to increase throughout childhood

and adolescence. In Ireland, around 35% of 9-year-olds spent no time online, but this figure decreased sharply to 10% by age 13 and approached zero among those aged 17 or 18 in 2015/16 (Bohnert and Gracia 2023).

Gender differences are also evident in adolescents' time allocation. In Finland, Spain, and the UK, boys aged 10 to 17 generally spend more time on screen-based activities and physical exercise, while girls devote more time to domestic tasks, non-screen educational activities, and personal care (Gracia et al. 2021). Using time diary data from the UK, Finland, Japan, and Korea between the 1990s and 2010s, Chang and Kan (2025) report marked gender disparities in adolescents' time use. Girls already spend twice as long on domestic work as boys but considerably less on sports and physical exercises. The gender gaps in sports and exercises are wider in Japan and Korea than in Finland and the UK, while the differences in domestic work are narrower.

Access to digital devices and the internet significantly influences children's device usage and screen time (Mullan and Hofferth 2022; G. Zhang et al. 2025), while also affecting their participation in other activities such as outdoor play, which has declined markedly in recent years (Mullan 2019). Overall, although children's time allocation may appear uniform due to standardised school schedules, various factors such as gender, family background, cultural values, and increasing use of portable devices generate notable gender, cross-national, temporal, and socioeconomic variations in their daily activities.

## 7 | Older Adults' Time Allocation

While there is substantial research focussing on gendered patterns of time use and family formation among individuals of prime childbearing and working ages, comparatively little attention has been given to how older adults generally spend their time. Given the global trend toward an ageing population and increased life expectancy, understanding the time allocation of older adults is crucial, as it provides valuable insights into their quality of life and health (Cha et al. 2025; Kan and Kolpashnikova 2021a). The Covid-19 pandemic, in particular, has had significant impacts on the time use and health of the older population (Lam and Garcia 2024).

An overview of older adults' time allocation generally shows that gendered time-use patterns persist within this demographic, with these patterns being more pronounced in East Asian societies compared to Western societies (Cha et al. 2025; Kan et al. 2021). Additionally, in Western countries, older adults with higher education levels tend to work longer hours, whereas in China, Japan, and South Korea, the opposite is true. This difference between Western and Eastern societies likely reflects the limited availability of old-age welfare support in East Asia.

Retirement is a significant life event, after which older adults often organise and structure their daily activities into routines (Ekerdt and Koss 2016; Velarde and Herrmann 2014). In Sweden, retirement is associated with a considerable increase in activities such as gardening, walking in parks, nature-related pursuits, and outdoor exercise (Vilhelmson and Thulin 2022).

However, such an increase in physical activity post-retirement is not observed in Australia (Sprod et al. 2017).

Older adults also play an important role in childcare. Since the 1970s, the number of multigenerational households in the US has risen, with 1 in 10 children living with their grandparents as of 2010 (Burnette et al. 2013; Steadman et al. 2024). Beyond co-residence, many children regularly spend time with grandparents: approximately 50% of young children and 35% of primary school-aged children engage with grandparents weekly (Dunifon et al. 2018). In China, grandparents are more likely to live with their grandchildren than in Europe or North America, with 50.4% of Chinese children under 16 living in three-generation households as of 2010 (Kan and Zhou 2022; Stelle et al. 2010; J. Zhang et al. 2020).

Becoming a grandparent is closely associated with early retirement, typically in anticipation of providing childcare (Bolano and Bernardi 2024). This effect is particularly pronounced for women, as grandmothers in Europe provide nearly four additional hours of childcare per week compared to grandfathers (Leopold and Skopek 2014). Research comparing grandparental and parental childcare indicates that while grandmothers and grandfathers dedicate similar amounts of time to routine and non-routine care activities, grandmothers spend less time on routine care than mothers, resulting in narrower gender gaps in childcare roles among grandparents compared to parents (Craig and Jenkins 2016).

Living with older adults also influences the time use patterns of their adult children, particularly those who are parents. In Hong Kong, mainland China, and Japan, mothers residing with older adults are more likely to participate in the labour market and experience a reduced motherhood penalty (Du et al. 2019; Hertog and Kan 2021; Xu et al. 2024; Yu and Xie 2018). Women living with older adults under the age of 75 spend significantly less time on housework and more on paid work, especially in rural China (Zhou et al. 2022). The shared housework responsibilities with grandparents contribute to reducing gender inequality in domestic labour between spouses in China (Ta et al. 2018), Hong Kong (Chen and Zhou 2022), Japan (Hertog and Kan 2021), and Italy (Albertini and Tosi 2022). However, one study using panel data and fixed-effect models suggests that this gender-equalising effect may be limited or questionable, particularly among couples in China (Hu and Mu 2021). The implications of grandparents' support in childcare for time use are often different for women and men. For example, in Mexico, the death of a grandmother is significantly associated with a decrease in mothers' working hours, but not fathers' (Talamas Marcos 2022). The study further indicates that this association weakens in contexts with greater affordability of private childcare or stronger public support.

Conversely, individuals living with older adults who often require care also allocate considerable time to caregiving activities (Zhou et al. 2022). Family caregivers employ various strategies to adjust their schedules to meet these caregiving demands, particularly when also employed (Baik et al. 2024; Kolpashnikova and Kan 2021b; Patterson et al. 2023).

## 7.1 | Flexible Working Arrangements and the Gendered Division of Labour

A newer potential of time diary data is to examine the implications of flexible working arrangements (FWAs) on the division of domestic labour, as FWAs have become widespread following the COVID-19 pandemic. Current studies investigating the impact of FWAs on gendered divisions of domestic labour yield mixed results (Çoban 2022; Maraziotis 2024). Some findings suggest FWAs may promote greater equality by enhancing household flexibility and narrowing gender disparities in domestic responsibilities (Pedulla and Thébaud 2015; Arntz et al. 2020). Conversely, other research indicates these arrangements can perpetuate traditional gender roles, reinforcing societal expectations of gender-specific duties (Carlson et al. 2021; Chung and van der Lippe 2020; Wang and Cheng 2023a). The latter outcome is particularly prevalent, with women typically using increased flexibility to undertake more domestic tasks, whereas men often utilize FWAs to enhance their engagement in paid work (Chung and van der Lippe 2020). A significant contributor to this gendered pattern is 'flexibility stigma', which disproportionately affects men, discouraging their adoption of FWAs for domestic purposes and thereby reinforcing unequal gender divisions of labour (Chung et al. 2021).

The COVID-19 pandemic further highlighted complexities surrounding FWAs and their impact on domestic labour. Although flexible working became prevalent during this period, research consistently documented a pronounced gendered division of household tasks (Chung et al. 2021; Hilbrecht et al. 2008a, 2008b; Petts et al. 2023; Ruppanner et al. 2021; Shockley et al. 2021; Zhou and Kan 2021). While men did increase their domestic workload somewhat, women continued to shoulder the overwhelming majority of household responsibilities. Nevertheless, the pandemic also sparked significant shifts in societal perceptions of FWAs, potentially reducing associated stigmas and boosting demand for flexible arrangements. This change is exemplified by the advocacy and implementation of the '4-day working week' campaign across Europe, explicitly aiming to reduce stigma and facilitate improved work-family integration, particularly for men (Chung 2024).

Emerging research emphasizes the need for nuanced exploration of the relationship between FWAs and domestic labour divisions (Wang and Cheng 2023a; Maraziotis 2024). Crucially, future studies should differentiate between various forms of domestic labour, such as housework versus childcare. Evidence suggests FWAs significantly affect women's childcare responsibilities more than general housework (Maraziotis 2024; Wang and Cheng 2023b). Additionally, Augustine et al. (2024) highlight that distinct types of FWAs—flexible working hours versus flexible workspace (remote working)—produce different effects. While flexible working hours positively associate with increased childcare time among mothers but not fathers, remote working arrangements positively associate with childcare involvement for both parents (Carlson et al. 2021). These findings underscore the importance of clearly defining and examining specific FWA types rather than treating them as homogeneous. Time diary data can offer more detailed insights

into the flexibility of different types of employment and provide a clearer measurement of domestic labour.

## 8 | Intersectionality and Gendered Time Use

Although gender differences in time use are well documented, few studies adopt an intersectional perspective to examine how gender interacts with other forms of social inequality in shaping work–family allocation. One constraint is that time-use surveys typically have smaller samples than other social surveys, as diary-based data collection is burdensome. As a result, they often include too few members of under-represented groups, such as minority ethnic populations or same-sex families, to allow detailed analysis.

Nevertheless, time diary samples are usually large enough to investigate the intersections of gender and socio-economic background. Manicardi and Virgillito (2025), for instance, apply an intersectional framework to the American Time Use Survey to analyse the interaction of social class and gender. They find that class plays an increasingly significant role in shaping women's unpaid work, with those from lower social classes facing greater time pressures than their higher-class counterparts. Importantly, their findings suggest that an advantaged social background does not necessarily ensure a more equitable division of women's time between paid and unpaid labour. Following above discussions about FWAs, research has shown that the acceptability and accessibility of FWAs vary substantially across occupational contexts, geographic locations, and institutional settings (Barrero et al. 2023). Chung and van der Lippe (2020) explicitly advocate an intersectional approach that considers intersecting dimensions such as gender, socioeconomic status, household structure, and national work-care regimes. Such an approach recognizes how these factors significantly influence the utilisation, acceptance, and impacts of FWAs on gendered divisions of labour (Kurowska 2020; Lyttelton et al. 2022).

In relation to race and ethnicity, Kolpashnikova and Kan (2020b), drawing on pooled 2003–2018 sweeps of the American Time Use Survey, show that resource factors such as income and education explain less of the gender gap in housework among Black Americans than among White Americans. Using stylized time-use data from British surveys, Kan and Laurie (2018) reveal substantial heterogeneity among ethnic groups in the domestic division of labour. Some minority ethnic groups, such as Indian, Chinese, and other Asian couples, display a more equitable division of domestic work than their White counterparts.

In Italy, Marra (2020) illustrates the value of combining time-use data with interviews, showing how gender inequality intersects with professional, organisational, and marital backgrounds. For example, divorced women with fixed contracts often face a double burden at both work and home. Marra (2020) underscores the policy relevance of such analyses and calls for more comprehensive intersectional approaches.

Intersectionality has been less emphasized in East Asian time use studies, mainly because of the region's greater ethnic

homogeneity and the relative rarity of single parenthood compared with Western countries. However, in China, the interaction between gender and the *Hukou* system (which designates urban and rural status, affecting access to welfare and employment opportunities) has been well documented. In China, among married couples, rural women generally spend significantly more time on both paid and unpaid labour, but less time on childcare compared to urban women. Meanwhile, rural men tend to spend more time on paid labour and less time on housework and childcare than their urban counterparts (Zhou et al. 2022).

### 8.1 | Outsourcing Domestic Work and Its Implications for the Gendered Division of Labour

The gendered implications of grandparents' support, mentioned in an earlier section, are comparable to those of outsourcing domestic work. While outsourcing is a growing area of research, time-diary surveys usually provide limited information on whether and how households outsource domestic tasks. As a result, studies in this field rely largely on stylized survey data. Oslawski-Lopez's (2024) cross-national study of 41 countries shows that outsourcing household tasks remains the exception rather than the norm. It is more common in societies with greater gender inequality, where women face stronger barriers in negotiating the division of household labour with partners. Outsourcing is also more prevalent in contexts with marked class differences, where structural inequalities foster supply–demand dynamics: on the one hand, a pool of low-skilled workers; on the other, households with the financial means to purchase their services.

Using longitudinal couple-level data from Israel (2000–2017), Raz-Yurovich and Tsachor-Shai (2025) examine whether outsourcing household tasks increases participation in paid employment and reduces gender inequality in paid work time within couples. Their findings suggest that the positive effects of outsourcing are confined to highly educated women. Specifically, outsourcing enables these women to expand their involvement in paid employment and narrows the gender gap in working hours within couples. Notably, this effect holds regardless of the partner's educational attainment.

### 8.2 | Daily Activity Sequence and Implications for Gender Equality

Finally, relatively little is known about how the timing and sequencing of daily activities interact with gender dynamics and shape well-being. Time-diary data are particularly valuable for such research, as they capture not only the amount but also the timing of daily activities. Factors affecting the domestic division of labour differ between weekdays and weekends (Hertog et al. 2021; Kolpashnikova and Kan 2020b). Time-diary data provide valuable insights, facilitating sequence analysis across the week and throughout the day (Kolpashnikova and Kan 2021; Lesnard and Kan 2011; Zhou et al. 2023), as well as visualization of activity patterns (Kolpashnikova et al. 2021). Time use fragmentation and multitasking are examples of this

new data analysis tools that can provide new insights in the gender differences in life quality and gender equality (Z. Lu et al. 2025).

### 8.3 | Concluding Remarks: Enduring Patterns and New Dimensions

This paper has reviewed the current state of research on gender inequalities using time-use data, updating our understanding of the progress of the gender revolution in relation to gendered patterns of time use. Historically, time diaries were collected primarily in Western industrialized societies. However, the availability of harmonized data from East Asia and newer initiatives in the Global South has expanded opportunities for comparative research, allowing scholars to explore both established and emerging dimensions of gender inequality.

Time-use data are particularly valuable for cross-national comparisons and for tracking the narrowing—or persistence—of gender gaps in paid and unpaid work. Continued monitoring is needed to assess whether these gaps will diminish, stabilise, or widen, especially in the context of demographic change, population ageing, and intensifying care demands, which often reinforce women's caregiving roles. Broader shifts in work, from the spread of flexible working arrangements accelerated by COVID-19 to labour market transformations driven by artificial intelligence and digital technologies, further underscore the need to understand how gendered patterns of time use are evolving.

Comparative studies that incorporate non-Western societies alongside European and Anglophone contexts help reveal how policy frameworks and cultural norms both enable and constrain progress towards gender equality. Expanding research to underrepresented regions, particularly the Global South, would deepen understanding of how gender, culture, and public policy interact in shaping time use.

Beyond paid and unpaid work, gender differences extend to leisure, sleep, and rest, as well as across the life course. Time-use data shed light on how major life events—such as marriage and childbirth—reshape men's and women's allocation of time, often widening gender gaps in employment, caregiving, and domestic labour. Non-conventional family forms, including same-sex couples and single-parent households, also present important avenues for investigation. Likewise, children, adolescents, and older adults remain under-researched, despite evidence of persistent gendered patterns in their daily lives. App-based methods for diary collection are promising in extending coverage to these groups.

Finally, methodological advances, particularly sequence analysis of diary data, can provide richer insights into the timing and sequencing of daily activities. Such approaches offer the potential to examine how couples coordinate time, how gendered divisions vary between weekdays and weekends, and how these dynamics affect well-being. These areas remain seriously underexplored and warrant greater research attention.

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### Conflicts of Interest

The authors declare no conflicts of interest.

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