



The division of labor in couples with children

A dyadic analysis in the German context

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Summary

This cumulative dissertation examines how couples with children in Germany divide paid and unpaid work and identifies several factors related to a more egalitarian division of labor. In the first paper, I focus on the division of paid work in couples with children, comparing female same-sex and different-sex couples, which constitutes an empirical novelty. Discussing the applicability of division of labor theories to same-sex couples, I further exploit the historically shaped gender culture of East and West Germany. Based on the German Microcensus (2010-2019) and using pooled OLS regressions, I show that female same-sex couples divide paid work more equally than different-sex couples. Comparing East and West Germany, I find a similarly equal division of paid work among same-sex and different-sex couples in the East, while different-sex couples in the West specialize more. The analysis highlights the importance of the cultural context and normative explanations of the division of labor.

The second paper turns to childcare, the intersection of the paid working life with the father's contribution to childcare being a key concern of researchers and policymakers. The COVID-19 pandemic and the short-time work scheme provided a "natural experiment" for investigating this nexus. Based on IAB-HOPP data and multinomial logistic regressions, we show that fathers in short-time work take over more care responsibilities than fathers continuously employed with regular working

hours. The findings indicate that policies targeting men's working hours can affect the gendered distribution of childcare within couples.

The third paper focuses on the methodological problem of analyzing the division of unpaid work in couples often from one partner's perspective only. Therefore, I examine the determinants of 'perception gaps' (defined as the mismatches between partners' responses). Based on pairfam data, I analyze respondents' reports on housework and childcare during the transition to first parenthood and show that a substantial perception gap exists, with 30% regarding housework and 25% concerning childcare. Results of the logistic regressions indicate that perception gaps are lowest among couples where the woman is employed or highly educated. These findings clearly underline the importance of a dyadic perspective on the division of labor in couples.

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Abbreviations

AME	Average marginal effects
BMFSFJ	Federal Ministry for Family Affairs, Senior Citizens, Women and Youth
CAPI	Computer-assisted personal interviews
CASMIN	Comparative Analysis of Social Mobility in Industrial Nations
DSC	Different-sex couple
ECEC	Early childhood education and care
FRG	Federal Republic of Germany
GDR	German Democratic Republic
HOPP	Highly frequent online person panel
IAB	Germany Employment Agency
IVF	In vitro fertilization
LSVD	The Lesbian and Gay Federation in Germany
NHE	New Home Economic
NEPS	National Educational Panel Study
OLS	Ordinary least square
PAPI	Paper-assisted personal interviews
pairfam	German Panel Analysis of Intimate Relationships and Family Dynamics
SOEP	Socio-Economic Panel
SSC	Same-sex couple
UK	United Kingdom
US	United States

1

Introduction

1.1 Introduction

“The personal is political.”

– *Second-wave feminist movement*

The second wave of the women’s movement emphasized the need to politicize the everyday life of women, which is often expressed through the phrase “the personal is political”. This slogan was coined by feminist activist Carol Hanisch in 1968 and highlighted the link between personal experiences and larger political issues. It underlines how power dynamics affected different areas of life, including marriage, household chores, intimate relationships, childcare, and work (Lee, 2007; Rosen, 2000).

The question at hand is whether this slogan is still relevant today or whether the demands of the feminist movement have already been met. Over the past 60 years, notable changes in terms of gender equality have occurred: Women have been elected to high political positions, such as Angela Merkel (Germany, 2005-2021), Jacinda Ardern (New Zealand, 2017-2023), and Sanna Marin (Finland, 2019-2023). In the German context, there has been a significant increase in women’s employment, and women have surpassed men’s college graduation rates (Riphahn and Schwientek, 2015). Discrimination in the labor market based on gender is now illegal due to the General Act on Equal Treatment (AGG), and gender segregation in occupations has decreased (Hausmann and Kleinert, 2014). Although there has been a rapid shift toward gender equality, this process has slowed in recent years, leading England (2010) to diagnose that the process she calls “gender revolution” has stalled. Nowadays, parenthood, in particular, is a driver of gender inequalities. Women carry out a disproportionately higher amount of care work and take longer employment breaks than men, they reduce their employment after childbirth, or withdraw from the labor market altogether, which has long-lasting and severe consequences: women obtain lower earnings (Gangl and Ziefle, 2009), are less likely to receive non-formal further job-related training (Zoch, 2023), and have lower pensions later in the life-course (Kreyenfeld et al., 2022).

While women integrated more and more into the labor market and other public spheres, men did not catch up in the domestic sphere to the same extent. Men's participation in the fields of childcare and housework did increase only slightly, leaving women with a double burden (Hochschild and Machung, 1989). The situation has become more complex due to various factors, including demographic changes such as the aging population, leading to an increased demand for care and support (Dowling, 2021). Additionally, as the educational system has expanded with more adolescents choosing the university track, they spend a longer time in the educational system, necessitating longer financial and emotional support from parents. Consequently, many parents find themselves in a challenging position, where they must simultaneously provide care for their own aging parents and support their young adult children. Thus, they are often referred to as the "sandwich generation" (Grundy and Henretta, 2006).

These complex circumstances create a delicate balancing act for individuals, especially women, who try to navigate the demands of work and family responsibilities. Recent studies indicate the tendency of women being hesitant to have children due to the pressure of navigating work and family life, as well as the unequal distribution of labor within relationships (Goldscheider et al., 2015; Mills et al., 2008; Riederer et al., 2019). The risk of a decrease in fertility rates, in turn, increases the severity of the issue of an aging society. During the COVID-19 pandemic, with schools and daycare facilities being closed, private care responsibilities have grown. Nevertheless, amidst these challenges, the coronavirus crisis provided possibilities for shifts in the distribution of labor toward a more egalitarian division. The pandemic has catalyzed the option of remote work, thereby presenting opportunities to save time by reducing commuting and, in combination with flexible hours, to align work with family obligations. Notably, fathers have stepped up, increasing the time spent with their children (Kreyenfeld and Zinn, 2021). Additionally, the short-time work program, issued by the Federal government in 2020, gave fathers more time to devote to childcare. The division of labor is clearly not only a concern for the

feminist movement but also an urgent issue in our present society. This thesis therefore examines how parents allocate paid and unpaid work to provide insight into the current relationship between the public sphere – *work*, and the private sphere – *care*.

Family policies and the structure of the welfare state play a significant role in shaping how couples distribute their work and caregiving responsibilities. This dissertation focuses on Germany, where, due to the separation in East and West Germany after the Second World War, two different gender cultures emerged (Pfau-Effinger and Smidt, 2011). The Federal Republic of Germany aimed to reinforce the male breadwinner model, while in the German Democratic Republic a dual-breadwinner and state-carer-system was in place (Ostner, 2010). Nowadays, the prevalent work arrangements in households with children can be characterized as a one-and-a-half-earner model, where the male partner works full-time, and the female partner engages in part-time employment. Although East and West Germany have been unified for over 30 years, differences between the two regions still exist. For example, mothers are more likely to be employed full-time in East Germany than in West Germany (Barth et al., 2020; Kreyenfeld and Geisler, 2006). Despite the implementation of various family policies to promote gender equality, such as the expansion of public childcare, remnants of the traditional breadwinner model persist. Examples are joint taxation and co-insurance in the health care system for the non-working spouse for married couples (Trappe et al., 2015; Daly, 2011). These inconsistencies in the family policies provide a particularly interesting case to study the division of labor in couples.

Against this institutional background and within the growing field of family sociology and demography, this cumulative dissertation investigates *how parents divide paid and unpaid work and under which circumstances the division of labor changes*. In three empirical chapters several gaps in family research are addressed. The first empirical chapter deals with the division of paid work more generally (Chapter 2) and is followed by a chapter on the division of unpaid work and its relation to disruptions in paid work during the COVID-19 pandemic (Chapter 3). The final

empirical chapter delves into the transition to parenthood and its impact on perceptions of housework and childcare (Chapter 4). In order to reflect on and account for diverging family forms, Chapter 2 addresses exactly this phenomenon and shifts the perspective to a comparison of female same-sex and different-sex couples with children in the household. Besides providing novel evidence on the division of paid labor in female same-sex couples, I also use the comparison with different-sex couples to test theories about the division of labor. Chapter 3 asks whether an heightened need of private childcare and more time available prompts fathers into increasing their share in childcare. The COVID-19 pandemic and the short-time work scheme offer a unique “natural experiment” to analyze regulations similar to the ones of paid parental leave and observe the impacts on male involvement in childcare. The last empirical chapter takes a closer look at the time of the transition to parenthood and examines how mothers’ and fathers’ reports of the division of unpaid work diverge. Including both partners’ reports – a so-called dyadic analysis – allows me to study the socioeconomic structuring of mismatches in the reports of new parents. Taken together this dissertation sheds light on different facets of the division of labor in couples with children in the household.

The remainder of this introductory chapter is organized as follows. The next section introduces the theoretical framework that informs the entire cumulative dissertation, presenting economic and cultural division of labor theories and discussing their shortcomings and research gaps. This is followed by an overview of Germany’s welfare state arrangements and an empirical analysis of the division of paid and unpaid work comparing couples with and without children. The findings highlight the pronounced presence of a gender-traditional division, particularly among different-sex couples with children in the household. The subsequent section provides a review of the existing research in the field of the division of labor in couples. The data and methods used in this study are presented subsequently. The introduction ends with a summary of each empirical chapter, discusses the study’s limitations, and presents concluding remarks.

1.2 Theory

Before presenting different theories explaining the division of labor in couples, I will define paid and unpaid work and identify the specific types of unpaid work addressed in this thesis. The division of labor can be divided into paid and unpaid work. According to Shockley and Shen (2016, p.127) “paid labor represents to work that is conducted in exchange for compensation”. Paid labor refers to work attached to the labor market and is usually compensated by wage. The division of paid labor is often assessed by constructing a relative measure of both partners’ work hours or income. Unpaid labor, also termed as domestic or family labor, has the function of maintaining family members and/or a home (Shelton and John, 1996, p.300). Unpaid household labor can be differentiated into three main types: a) housework which includes routine tasks such as cooking, cleaning, shopping, and laundering, as well as intermittent tasks (e.g., gardening, repairs, paying bills); b) care for children includes supervising children (e.g., homework supervision, driving them around) and caring for them (e.g., feeding, washing) and also care for other family members (e.g., parents in need of care); and c) emotion work which is a less visible task of maintaining family members’ psychological well-being (Erickson, 1993; Hochschild and Machung, 1989). Furthermore, other invisible household tasks besides emotion work, such as household management, are also elements of unpaid family labor. Even though these invisible elements have been established as another important dimension of the division of labor, they are less often explicitly assessed in quantitative studies as they are more challenging to measure. Still, excluding these types of work might be negligent because of the highly gendered distribution of this less visible work which probably underestimates the female partner’s unpaid workload (Coltrane, 2000; Strazdins and Broom, 2004). While this thesis examines the division of paid labor, routine housework, and childcare, it is unfortunately impossible to include the element of emotion work or cognitive labor into the analysis.¹

¹The dimension of household management, however, is included in Chapter 3.

One common assumption connecting all existing theories of the division of labor is that all household members would prefer to avoid domestic work as it is characterized as boring and repetitive (Dominguez-Folgueras, 2022). Childcare is sometimes included as part of the unpaid work arrangement, it has to be noted that parents rate childcare as enjoyable in contrast to routine housework (Sullivan, 2013; Bonke and Esping-Andersen, 2011). However, some childcare tasks such as transportation or other routine chores (feeding, bathing, dressing) are seen as less enjoyable than playtime (Cooke, 2007; Raley et al., 2012). Research has shown that housework and childcare are distinct areas of focus as they hold varying significance in people’s lives (Perry-Jenkins and Gerstel, 2020). Thus, I differentiate between housework and childcare in this dissertation.

Theories concerning the division of labor in couples can be divided into three strands. The first strand explains the household division of paid and unpaid labor based on an economic rationale, for example, through each partner’s resources, such as income. The second strand focuses on the available time that partners have, while the third strand takes cultural or normative factors, such as gender and gendered identities, into account.

1.2.1 Economic theories

New home economics

Economic theories are based on the assumption that individuals are rational, self-interested, tastes are exogenous, and that interpersonal utility assumptions are impossible (England and Budig, 1998, p.96). The New Home Economic (NHE) literature by Becker (1985, 1991) views the family as a system with a common budget and a joint household utility function. This perspective assumes that all household members prioritize maximizing the overall household utility rather than focusing on their individual utility maximization. According to the NHE literature, this optimal household utility function is attained through specialization. As a result, each partner in the relationship specializes in one sphere – either engaging in paid mar-

ket work or unpaid household labor. The partner with a higher earning potential typically specializes in market labor, while the other partner dedicates their time to homemaking.

According to the NHE theory, the division of labor in couples is determined by the partners' comparative advantages at the beginning of the relationship (Schulz, 2010, p.73). The NHE theory suggests that entering a relationship with a partner who possesses the resources one lacks is rational. The greater the disparity in human capital resources, the higher the potential for gains through specialization (Schulz, 2010, p.73).

This theory faces several problems and has been discussed widely by feminist economists (England and Budig, 1998; Folbre, 1986). First, it disregards the distributional aspects of time-use decisions and assumes that all future household decisions are settled at the outset of the relationship or when matching on the marriage market (Beblo, 2001, p.13). This rigid assumption of lifetime binding contracts and time-constant preferences fails to account for temporal shocks such as job losses or the impact of short-time work, as the division of labor is established from the start.

Second, the NHE literature assumes that the comparative advantages are constant throughout a marriage, but it is more suitable to regard them as amplifying over the life course (Beblo, 2001, p.14). For example, Ott (1993) coins the problem as the "vicious circle of economic rationality". It illustrates how young women who desire to have children often anticipate shorter and more discontinuous work trajectories. Consequently, they tend to invest less in their education or occupational training than young men. This early differential investment leads to a wage gap between men and women, reinforcing the potential gains from a gender-specific division of labor. Employers, in turn, may be influenced by the different work patterns of men and women and may statistically discriminate against female employees while promoting the careers of male employees. This perpetuates the traditional division of labor between men and women, creating a full cycle where the anticipation of lower gains from female human capital investments further strengthens the

gender-specific division of labor (Beblo, 2001, p.13). The static view of the NHE overlooks the long-term effects of human capital formation. In situations where the husband maintains continuous employment, he steadily increases his human capital over time, while the female partner's marketable human capital remains unchanged or may even decrease due to specialization in household work (Beblo, 2001, p.14). It is crucial to recognize that the husband's productivity advantage in market work is not constant but is instead described as dynamic.

Models based on the joint household utility function have been criticized for leaving no room for conflicting preferences and power dynamics within the couple (England and Budig, 1998). In response to these criticisms, bargaining theories provide alternative theoretical perspectives on the division of labor in couples, incorporating ways to address power differences and conflicting preferences within the household.

Relative resources and bargaining theories

Blood and Wolfe (1960) formulated the relative resource hypothesis, which predicts that the level of relative resources partners bring to a relationship determines the amount of unpaid work each partner completes. The relative resources are translated into power, conceptualized as dominance in the bargaining process. The partner with a higher level of education and income minimizes their participation in unpaid work by bargaining them out of these tasks (Coverman, 1985).

The novelty of bargaining perspectives is that each partner has a utility function in contrast to the NHE literature that understood the division of labor as a joint utility function (Samuelson, 1956). Ott (1998) presents a compelling critique of the idea that, during marriage, couples' preferences are combined into a single joint utility function, with distributional concerns addressed only during household formation or dissolution. According to Ott (1998), the prospect of separation or divorce underscores the importance of recognizing and accounting for individual preferences within the marriage, arguing for the implementation of separate individual utility

functions for each spouse. The utility function is influenced by the allocation of time investments in three areas: the market, household work (including childcare), and leisure activities (Ott, 1992, p.10). Each sphere produces goods that offer a different level of transferability, with income as a market good being the easiest transferable good also to people outside of the household. The goods provided through unpaid housework are transferable only within the household and not to people outside of the household. Since household work produces goods that can be shared among household members, not everyone in the household needs to spend time on unpaid labor. The higher the degree of transferability of the good a household member produces, the higher their bargaining power. Transferable resources, such as income, can intensify the threat made by one partner (Ott, 1992, 1998). The ultimate manifestation of this threat is the possibility of ending the relationship.

Gender inequalities in the labor market

Theories centered around relative resources consider economic factors as the primary explanatory mechanism for the division of household tasks, portraying them as gender-neutral, where both men's and women's economic resources influence their share of unpaid work. However, it is essential to acknowledge that in many contexts, including Germany, men often hold a more advantageous position in the labor market. This disparity is evident in the gender wage gap, with men earning, on average, 18% more than women in Germany in 2023 (Statistisches Bundesamt, 2023a). Additionally, women encounter glass ceilings (Collischon, 2019), limiting their access to management positions, and they also face a motherhood penalty in their wages (Gangl and Ziefle, 2009; Kühhirt, 2012), whereas fathers receive a wage premium (Misra and Strader, 2013). Consequently, inequalities in the distribution of domestic work persist across various contexts and social strata. The unequal positions of men and women in the labor market shape their available resources and, consequently, their bargaining power within couples. As a result, it is not surprising that disparities in the division of household labor persist, as economic factors contribute to the dynamics within couples, influencing how tasks are allocated and negotiated.

1.2.2 Time availability

In its simplest form, the time availability perspective suggests that the differences in partners' participation in housework and childcare depend upon their available time and the demands to perform domestic work (Stafford et al., 1977; Perrucci et al., 1978). In this context, demands refer to the required domestic work to fulfill to maintain the household. The demands vary depending on the number and age of children in the household. Young children require more time and care, leading to higher demands on parents. Additionally, the size of the dwelling also impacts the amount of time needed for household chores and maintenance. Families with young children, multiple children, and larger households face increased demands for time spent on domestic work. On the other hand, outsourcing, such as hiring cleaning personnel or buying and utilizing time-saving devices like robot vacuum cleanings, decrease the demands for domestic chores (van der Lippe et al., 2004). Following this perspective, one would expect a strong relationship between women's and men's time spent on housework and childcare, their time spent on market labor, and the household composition, such as the age and number of children in the household. The partner with less time spent in paid work is predicted to take on the greater responsibility in childcare and housework (England and Farkas, 1986).

Coverman (1985) refines the time availability hypothesis by specifying the mechanism and formulating three assumptions. First, women are primarily responsible for care and housework as it is prescribed to them by society. The female partners' employment limits their time available, which means that women tend to be the ones who perform unpaid work as long as they have the time available to do so. According to the second assumption, men's time spent on unpaid work is based on the need to perform those tasks. This implies that men do not perform unpaid work intrinsically but rather do so because their partners ask them to (Dechant, 2022). The amount of unpaid work expected of men is influenced by factors such as their partner's employment status, the number of children, and the age of the children. According to Coverman (1985), the third point to consider is that men's ability to

perform housework and childcare is limited by the amount of time they spend in the workforce.

Related to the three assumptions specified by Coverman (1985), Gough and Killewald (2011) highlight the rank-order problem associated with the time availability hypothesis. According to Gough and Killewald (2011), the underlying assumption of the time availability theory is that couples first decide how to allocate each spouse's time in the paid labor market and then distribute the remaining time of each spouse in domestic labor. However, Gough and Killewald (2011) argue that if housework and hours in paid work are jointly determined, with gendered expectations of housework allocation influencing spouses' paid work hours, modeling time spent in domestic work with the premise that the labor force decision is given may lead to underestimating the impact of gender and overestimating the effect of time availability (Gough and Killewald, 2011, p.1086). Instead, it is more plausible that time in the labor force and housework are jointly determined, making them endogenous. In contrast to the static design of the time availability hypothesis, Gough and Killewald (2011) suggest using situations with an involuntary and sudden nature to test the time ordering. For example, examining the effects of an involuntary job loss or the short-time work scheme during the COVID-19 pandemic can provide opportunities to observe labor market outcomes as determined prior to, rather than jointly with the time in housework. Therefore, these situations allow to test how time spent in the labor market affect changes in the division of unpaid labor among couples.

1.2.3 Cultural theories

In contrast to economic theories, explanations relying on social norms or gender constructionist views highlight the role of the normative context and how it shapes behavior. In every social setting, a shared collection of guidelines for the expected behavior of individuals within that particular setting exists. The purpose of these social norms is to offer direction and simplify the complexness of the world or in-

terpersonal exchanges (Popitz, 1961). Sanctions are employed to strengthen the adherence to norms, with the strength of these sanctions differing based on the deviation from the norm. In order to evade sanctions, individuals tend to exhibit behavior that aligns with norms. Nonetheless, norms are also subject to change. For example, when deviant behavior is not sufficiently sanctioned, a critical mass behaves differently to the existing norms (Popitz, 1961, p.194f.). Social norms can vary for groups; socially acceptable behavior for a child might not be adequate for an adult, so it is the case for gender. *Gender roles* define how men and women should behave and also hold implications for the division of labor. The gender role ideologies which determine the appropriate adult male and female roles are mainly formed through socialization during childhood (Coverman, 1985).

Gender Ideology

The perspective of Greenstein (1996) on *gender ideology* distinguishes between gender roles and gender identity. Gender identity refers to an individual's self-perception as male or female, while gender ideologies encompass the beliefs and values that shape these identities. Using the example of two men who identify as male, Greenstein (1996) demonstrates that their interpretations of what it means to be male can vary significantly due to their respective gender ideologies. One man may associate a male identity with the perception that household work is primarily the domain of women, while another man may see an equal division of housework as masculine. (Greenstein, 1996, p.586).

Furthermore, in the context of marriage or long-term relationships, these unions serve, in addition to other essential functions, the latent function of allowing husbands and wives to exhibit behaviors that validate their identities as male and female. In other words, they provide an opportunity for individuals to manifest the visible aspects of their gender ideologies (Greenstein, 1996, p.586).

To explain the division of labor in the household, Greenstein argues that the interaction between the husband's and the wife's gender ideologies have to be taken

into account (1996, p.588). Egalitarian husbands must have egalitarian wives before they shift more energy into household work. Put differently, the contribution of egalitarian husbands to unpaid work depends on the gender ideology of their wives (Greenstein, 1996). However, there is evidence that wives tend to be more affected by husbands' gender ideology than vice versa (Shelton and John, 1996).

Gender identity formation

Focusing particularly on dual-earner couples, Bielby and Bielby (1989) aim to explain how married men and women balance work and family identities. By investing time in the sphere of work or family, individuals develop strong commitments that eventually transform into their identities (Bielby and Bielby, 1989, p.777). Consequently, they establish a "work identity" or "family identity", as their behaviors in these domains contribute to their sense of self and meaning, leading them to predisposes in line with the activity (Bielby and Bielby, 1989, p.777). The novelty of the approach by Bielby and Bielby (1989) lies in incorporating sex role norms as an explanation for how men's and women's identities form. The societal expectations surrounding the roles of wife and mother, primarily responsible for household duties, imply that employed wives face dual role identities, often having to trade one off against the other (Hochschild and Machung, 1989). Conversely, men's role as husbands does not necessitate sharing household responsibilities, aligning more inherently with their workplace role (Bielby and Bielby, 1989). This divergence in structural and normative constraints means that men can sustain dual work and family identities, while women might have to sacrifice one to maintain the other. As a result, women in dual-earner couples are exposed to a double burden or role conflict compared to their male partners. The described role formation process, rooted in societal norms, suggests that change in this area is slow and gradual (Schulz and Blossfeld, 2006).

Doing gender

The underlying idea of the *doing gender* theory is that doing specific household chores provide opportunities to demonstrate to oneself and others that one is a competent member of a sex category with the capacity and desire to perform appropriately gendered behaviors (West and Zimmerman, 1987). Traditionally, women are assigned domestic and care responsibilities, such as childcare, while men are expected to work for pay and provide for their families financially. The doing gender approach by West and Zimmerman (1987) goes beyond gender role theories as the term role is often referred to as situation-specific. When defining gender as a role, one assumes that gender is only salient in certain situations. In contrast to that, the doing gender approach focuses on social interactions and how gender is constructed constantly in every social interaction. West and Zimmerman (1987) argue that gender is important in all social interactions and can not be compared to other roles such as being a colleague, or team member. Instead, “gender is not a set of traits, nor a variable, nor a role, but the product of social doings of some sort” (West and Zimmerman, 1987, p.129).

The division of labor in couples is based on the sex categories and their prescribed appropriate behavior. The (re-)creation of the sex categories in social interactions shape what is perceived as “natural” and “normal”. The connection between sex category and the allocation of labor within couples, both in paid and unpaid work, might create an impression that these divisions are rooted in inherent biological differences. However, it is important to recognize that these divisions are, according to the doing gender theory, outcomes of ongoing interactive processes over a prolonged duration.

Gender deviance neutralization

Brines (1993) contributes to the theoretical field by combining the doing gender approach with economic dependency theories. Economic dependency theories state that the partner that relies on the income of the other partner exchanges unpaid

household labor against the provision of income to secure the exchange of income against unpaid work (Acker, 1988). This approach does not predefine the gendered relations of dependency. Still, due to societal expectations and norms, economic dependence has different meanings for men and women. A man financially reliant on his partner has better employment prospects, thus, restoring his self-sufficiency more easily, in contrast to a woman in a similar situation. The gendered chances of ending the economic dependency also shape their behavior in case of financial dependence (Brines, 1993). Bringing the economic and doing gender approach together, Brines (1993) argues that besides the economic exchange, a symbolic one exists in the form that the exchange of income against housework is a way to express femininity and masculinity consistently.

In the case of violation of these gender performances from the preassigned gender role in one sphere, the person will compensate for this violation by intensifying a gender-conforming behavior in another sphere (Brines, 1993; Sullivan, 2011). For example, suppose a woman is the primary breadwinner. In that case, she might compensate for this deviation of what is appropriate for her gender role by increasing her housework share. Conversely, the male partner might reduce his share of unpaid care work to protect his jeopardized manhood (Brines, 1993). The gender deviance neutralization approach explains why women perform the dominant share of unpaid household labor even when they are the main breadwinners, as the couple compensates for the deviant behavior with a gender-conforming corrective.

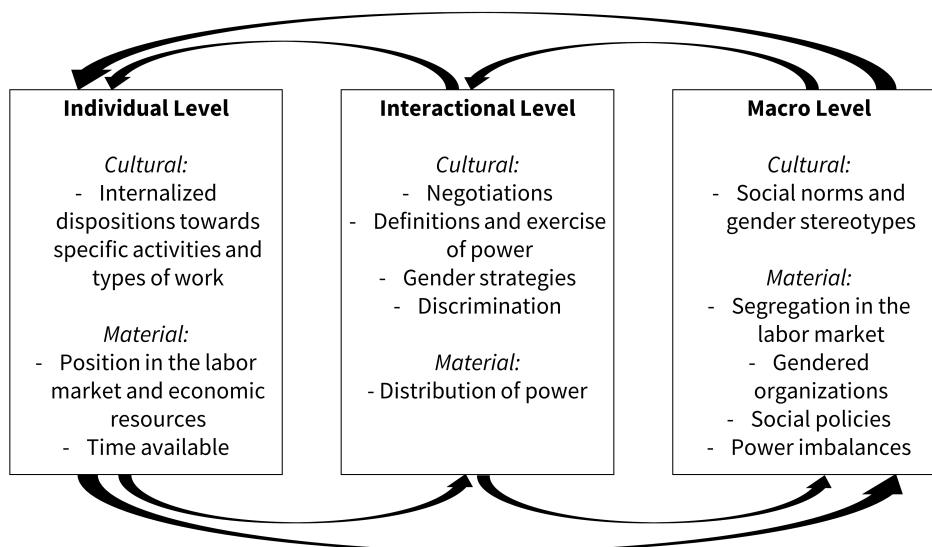
1.2.4 Gender social structure framework: An integrative theoretical framework

Theoretical explanations based on economic or time resources have often assumed gender neutrality. However, these approaches have faced criticism from cultural explanations emphasizing gender as a dimension of distribution processes within intimate couples. Treating these theoretical strands as separate entities might be reductionist. To address this, researchers have sought ways to combine different

theoretical traditions and avoid the pitfalls of gender neutrality but still recognize the value of economic theories. For example, Brines (1993) offers a combination of the economic dependency and doing gender approach as a way to move the theoretical landscape forward. Approaches that encompass a multilevel structure capturing the highly interdependent individual and social processes seem to be a promising future for the field of family sociology (see for example the field of fertility research: Huinink and Kohli, 2014; Huinink et al., 2015).

For the field of the division of labor theories modeling gender as a social structure as proposed by Risman (2018) and simplified by Dominguez-Folgueras (2022) is a comparable multilevel approach. A social structure is external to individuals but influences human actions through the constraints and norms it imposes, which individuals internalize and encounter in their everyday lives. Social structures do not hinder individual agency, but they do shape the range of choices available to individuals. In this perspective, gender is considered a stratification system that operates at three levels: the individual level, the interactional level, and the macro level (see Figure 1.1)

Figure 1.1: Gender structure of the division of domestic and care work



Own illustration of the model by Dominguez-Folgueras (2022, p.91).

To illustrate the functionality of the gender social structure framework, I use the example of time availability formulated by Dominguez-Folgueras (2022). Due to gender socialization, men and women are exposed to different ideas and expectations, with women often expected to prioritize caregiving and men to dedicate more time to paid work. These gendered dispositions are internalized at the individual level, shaped by social norms and gender stereotypes at the macro level. Consequently, men and women make different investments in paid work, influencing their time availability on the individual level. At the interactional level, these patterns of time use become part of couples' negotiations, influencing how time is allocated within the relationship. These couple-level negotiations are also influenced by the social structure at the macro level, where employers may discriminate against women through lower wages and where fathers may face more obstacles when requesting part-time work compared to mothers.

This holistic perspective considers gender as a social structure operating across multiple levels and provides a perspective of how cultural and material or economic factors are intertwined through different levels. Although it may not be feasible to adopt this framework in empirical research directly, it helps to understand the interrelations of different theoretical perspectives.

1.2.5 Summary and research gaps

This section has provided an overview of various theoretical approaches that explain the division of labor in couples. Economic theories regard income as a crucial determinant in dividing unpaid work within households. According to these theories, as relative income or income potential increases, the contribution to unpaid work tends to decrease. The use of a joint household utility function has been criticized for failing to account for individual preferences and power dynamics within couples, as discussed in bargaining theories. Bargaining theories take into account the influence of individual preferences and power dynamics within couples, offering a more comprehensive perspective on the division of unpaid work. Although the distribu-

tion of relative resources is one factor in explaining the division of domestic work in couples, cultural theories add by highlighting gendered norms as essential explanatory factors. It is evident that the division of labor is a complex social phenomenon influenced by multiple mechanisms, such as time and income resources or gender norms. The presented example of an integrative framework by Risman (2018) and Dominguez-Folgueras (2022) combining these explanations emphasizes that theoretical development is an ongoing process with the need for further refinement and expansion.

A crucial aspect to consider is creating a flexible model that can adapt to shifting circumstances. For instance, the NHE approach assumes that couples set the division of labor at the beginning of the marriage and is then static. Although the time availability perspective per se can also be described as static, its simplicity allows for modification as proposed, for example, by Gough and Killewald (2011). The authors described a “temporal ordering problem” and examined the impact of involuntary job loss as a shock on the division of labor to circumvent this problem (Gough and Killewald, 2011). Similarly, Chapter 3 of this thesis investigates the involuntary and sudden situation of short-time work during COVID-19 in Germany. This “natural experiment” provides an opportunity to explore how men, with increased time availability and maintaining a certain income level, respond to this unique circumstance, particularly when whole sectors or industries are affected.

Another identified shortcoming is the focus on heterosexual families in the division of labor theories (Geist and Ruppner, 2018; Dominguez-Folgueras, 2022). With the implementation of same-sex marriage across Europe and advancements in fertility research, family forms beyond the nuclear heterosexual family are becoming more prevalent. It is essential not only to describe the division of labor in same-sex couples empirically but also to assess the applicability of the existing theories to these couples. According to Goldberg and Perry-Jenkins (2007, p.298) same-sex couples present “[...] a unique ‘test case’ in that they offer the opportunity to study gender (differences) without the potentially confounding variable of sex (difference)

with regard to family processes, in general, and the division of labour, specifically”. Chapter 2 examines the division of paid work in female same-sex and different-sex couples with children in the household and rigorously tests the applicability of different division of labor theories.

1.3 The German welfare state

Couples decide how they divide paid and unpaid work based on the specific cultural and institutional factors in a given society. When transitioning to parenthood, institutions such as public childcare provision, parental leave policies, and societal expectations regarding the roles of mothers and fathers are important determinants of how partners divide work within the household. This section starts with a reflection on welfare state regime typologies and their applicability to family-related topics. On the basis of the idea of welfare culture, I describe the gender culture in the German welfare state and compare East and West Germany. Next, a detailed overview of the German family policies that aim to reconcile parents’ work and family life follows. Additionally, I present own descriptive evidence for the division of labor in Germany.

1.3.1 A conservative welfare state? Reflection on welfare state typologies

According to the conventional welfare state literature (Esping-Andersen, 1990), Germany has been classified as a conservative-corporatist welfare state. In this type of welfare state, there is a social security system that supports individuals who cannot participate in the labor market for reasons such as illness, job loss, or caregiving responsibilities. However, access and amount to these social transfers are contingent upon labor market participation, indicating a status-remaining function. For instance, the amount of a state-provided pension is determined by the individual’s previous labor market income. In terms of decommodification, the level in Germany

can be considered moderate compared to the high degree of decommodification seen in social-democratic welfare states. Esping-Andersen (1990) characterizes the conservative-corporatist welfare regime as one where the family plays a central role in the provision of welfare. The principle of subsidiarity is applied, which means that the state only intervenes when the family cannot fulfill its members' welfare needs.

The *Three Worlds of Welfare State* by Esping-Andersen (1990), although considered a modern classic that greatly contributed to the field of comparative research, has not been without criticism. Esping-Andersen received critique for mistakenly categorizing Mediterranean countries as conservative-corporatist rather than recognizing them as a distinct type of welfare state on their own (Ferrera, 1996; Bonoli, 1997). Another line of criticism is the failure to account for the employers' contribution to the development of the welfare state, an aspect included in the "Varieties of Capitalism" approach proposed by Hall and Soskice (2001). Furthermore, in line with others, Arts and Gelissen (2002, 2010) raise questions about the suitability of ideal types as a framework. Based on a literature review, Arts and Gelissen (2002) argue that certain countries are consistently used as standard examples, with the United States representing the prototype of the liberal welfare state and Germany serving as the conservative ideal type. However, they highlight the challenges posed by hybrid cases such as the Netherlands and Switzerland. Arts and Gelissen (2002) conclude that welfare states are rarely pure types and often fall into hybrid categories, and in the end, typologies are always an oversimplification of reality. Moreover, the emergence of new welfare state regimes outside of Western or European countries highlights the need for broadening welfare state research (Abu Sharkh and Gough, 2010; Rudra, 2007).

The critique that is essential to this dissertation is the need to include gender and unpaid care work as determinants of the welfare state regime (Sainsbury et al., 1996; Orloff, 1996; Lewis et al., 1994). The inclusion of gender within the analysis of welfare state regimes is vital to understand the level of decommodification and the

gendered nature of stratification. Gender plays an important role as social rights are closely linked to paid work, and women participate less in the labor market compared to men (Orloff, 1996). Feminist scholars have provided a rich variety of more appropriate classification schemes that include gender and unpaid care work as part of a welfare state typology (for example, Sainsbury et al., 1996; Lewis et al., 1994; Leitner, 2003). For instance, Leitner (2003) created a classification system focusing on the family’s caregiving function in the welfare state, which classified Germany as a regime promoting *explicit familialism*. In regimes with explicit familialism, the family is responsible for caring for children and older people, as evidenced by familialistic policies such as long parental leaves and a lack of alternative state-provided care (Leitner, 2003).

As summarized by Daly and León (2022), the concept of familialism/defamilialism aims to theorize the impact of social policy on women’s dependence on the family and the state’s construction of family responsibilities and roles. While this concept has been widely adopted and integrated into mainstream welfare state theory (Lohmann and Zagel, 2016; Korpi, 2000; Esping-Andersen, 1999), the concept of defamilialization has faced criticism in recent years for its narrow focus on employment. To address this limitation, Kröger (2011) proposes a conceptual advancement with the concept of “dedomestication”, which measures the extent to which policies enable personal freedom beyond confinement to the domestic sphere. Saxonberg (2013), on the other hand, suggests replacing defamilialization with “degenderization”, which examines how policies influence gender roles. Alternatively, Mathieu (2016) shifts the perspective from the family to the mothers and develops the concept of “demotherization” to analyze care work. Lohmann and Zagel (2016) highlight the importance of adopting a multidimensional approach that considers both familializing and defamilializing policies simultaneously, thereby implicitly incorporating a cultural dimension. An approach, that is also the basis for the multidimensional approach by Lohmann and Zagel (2016), stems from Pfau-Effinger (2005) emphasizing the cultural or normative function welfare states have. She introduces the

concept *welfare culture*, which “[...] means the relevant ideas in a given society surrounding the welfare state and the way it is embedded in society. It comprises the stock of knowledge, values and ideals to which the relevant social actors, the institutions of the welfare state and concrete policy measures refer.” (Pfau-Effinger, 2005, p.4). The *welfare arrangement* encompasses the interplay between the welfare state policies and the welfare culture, reflecting the ideas in a society surrounding the welfare state, the institutional system, and social actors (Pfau-Effinger, 2005, p.4f.). The welfare arrangement approach aims at providing a tool for taking the complex interrelations of culture and welfare state policy into account.

Germany: still divided? Differences between East and West

In the context of the German welfare state, analyzing how family policies impact family behavior can be achieved by examining the concept of welfare arrangements and gender culture. This framework can help distinguish the differences between East and West Germany. In West Germany, the gender culture involves men as breadwinners and women as part-time caregivers, while in East Germany, there is a dual breadwinner and state-carer-system in place (Pfau-Effinger and Smidt, 2011).

After World War II, the Federal Republic of Germany (FRG) aimed at family policies that demarcated from the Third Reich and the socialist German Democratic Republic (GDR) (Ostner, 2010, p.220). The underlying logic was to strengthen the male breadwinner marriage, which is related to access to social security benefits and tax allowances. It treats the family as a unit but does not directly qualify as pro-natalist policies, which were opposed by the government (Ostner, 2010). Society believed that mothers were the most suitable caregivers for children due to the perception that children required specialized and attentive care, which mothers could best provide. Even though women also entered the labor market in West Germany, mothers still prioritized the extensive care of children, particularly during the first couple of years of a child’s life.

In the former GDR, the full integration of women into the labor market was an integral part of meeting the goal of equality. The socialist economy and the

social integration in the former GDR were based on a full-time working population, with women being a vital resource to build the country's economy (Trappe, 1996; Rosenfeld et al., 2004). Childcare and the socialization of children were defined as a central political objective of the state. The provision of inexpensive or free public childcare allowed women the combination of motherhood with full-time waged work providing them with financial autonomy (Pfau-Effinger and Smidt, 2011).

With the unification in 1990, the West German family policies were transferred to the "neuen Bundesländer". Not only did the design of the family policies change for East German families, but the labor market was restructured, resulting in high unemployment rates, which also affected women's possibility for employment (Rosenfeld et al., 2004). Although the unification was over three decades ago, against the prediction that East German families would adopt West German families' behavior (Klauder, 1994; Dorbritz, 1997), differences are still visible. Empirical evidence shows that mothers in East Germany are more often employed and work full-time compared to mothers residing in West Germany (Rosenfeld et al., 2004; Holst et al., 2001; Barth et al., 2020; Kreyenfeld and Geisler, 2006). The employment constellations within couples diverge as well. Huinink et al. (2012) show that in East Germany for the cohort of 1971-1973, 40% of the couples with children both partners work full-time, while only 11% of the couples in West Germany did. In West Germany, the male breadwinner/female part-time model is the dominant arrangement with 40%. Differences are still visible in the post-reunification cohort (1981-1983) (Huinink et al., 2012). Regarding the division of unpaid work studies confirm remaining differences with couples in East Germany dividing housework and childcare more equally (Künzler et al., 2001; Cooke, 2007). The differences in mothers' labor market participation and the division of unpaid work could be, on the one hand, due to structural factors such as the economic need for two incomes or a higher provision of public childcare in East Germany, but also attitudes of particular maternal employment seem to differ between the two regions (Rosenfeld et al., 2004). While 1992 in East Germany 69% of the women and 64% of the men were in favor of working

mothers, and only 49% of the women and 38% of the men in West Germany were in favor of working mothers (Barth et al., 2020). In 2015-2018 all groups were more supportive of working mothers, but respondents residing in East Germany held still more egalitarian attitudes than their West German counterparts. Related to the attitudes towards working mothers, particular young children in East Germany are more often enrolled in public day care centers compared to West Germany (Zoch and Schober, 2018).

1.3.2 Family and labor market policies

The expansion of public childcare

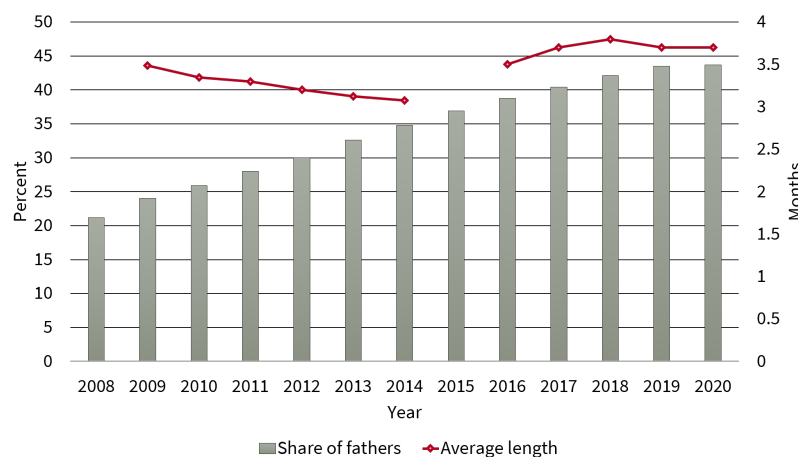
Until the early 2000s, public childcare mainly focused on early education and creating equal opportunities for children rather than helping women balance their work and family lives. This is evident in the fact that kindergartens only offered half-time programs for three to six-year-old children (Kreyenfeld et al., 2002). Due to a compromise between federal states in East and West Germany, children aged three to six now have a legal right to attend daycare centers (Oliver and Mätzke, 2014). To address the shortage of childcare services for younger children and the growing number of mothers in the labor market, the 2005 Day Care Expansion Act (TAG) focused on expanding public childcare for children under three whose parents are employed or in education (Mätzke, 2019). Nonetheless, the TAG failed to achieve its goal of increasing access to public childcare for younger children, and the pressure from parents increased. As a result, the Child Care Funding Act (Kinderförderungsgesetz, KIFÖG) was introduced in 2008 (Klinkhammer and Riedel, 2017). This act established a legal entitlement for children starting at the age of one to receive a daycare place, which became effective in 2013 (Klinkhammer and Riedel, 2017). Generally, expanding public childcare for particularly young children had positive effects on mothers' labor market participation (Zoch, 2020; Geyer et al., 2015). However, due to pressure from the conservative wing of the Christian Democrats, who feared that the de-familialization had gone too far, the government introduced the child-

care supplement. This was designed as a cash-for-care scheme giving parents who did not use ECEC services up to 150 Euros per month (Klinkhammer and Riedel, 2017). These developments simultaneously sent mixed signals to parents in terms of care norms. However, the Federal Constitutional Court declared the childcare supplement unconstitutional in 2015.

The parental leave benefit system

The parental leave system is also crucial in shaping the reconciliation of work and family life, as well as the division of labor in couples. In recent decades, significant changes have been made to the parental leave system. Before 2007, the child-rearing allowance (Erziehungsgeld) offered two options: either fathers or mothers could receive 300 Euros per month for up to 24 months, or child-rearing allowance could be taken for one year with an allowance of 450 Euros per month (Kluve and Tamm, 2013). The allowance was not designed as a wage replacement but rather as means-tested. If the family income exceeded 30,000 Euros per year, the allowance amount was reduced. Mostly mothers were the recipients of the child-rearing allowance (Klinkhammer and Riedel, 2017). Fathers were technically eligible to take parental leave, either simultaneously or alternately with their partners, but less than 5% of fathers took parental leave (Bünning, 2015).

Figure 1.2: Share of fathers taking parental leave benefits and average length of the uptake in months



Statistisches Bundesamt 2023, own illustration.

In 2007, the new Parental Allowances and Parental Leave Act (BEEG), introducing *Elterngeld*, replaced the previous Federal Child-Rearing Allowance Act. The new *Elterngeld* is an earnings-related parental leave benefit that replaces 67% of their previous earnings (65% as of 2011) for the first 12 months of parental leave. Parents can receive an additional two months of parental leave if the father and mother each take advantage of the transfer for a minimum of two months. This can be added to the standard 12 months of parental leave. The two additional months are often referred to as “daddy months”. The combined total of 14 months can then be divided freely between the two parents. The maximum amount is 1800 Euros per month, and parents with no or very low pre-birth labor earnings receive a flat rate minimum of 300 Euros per month (Kluge and Tamm, 2013). To receive parental leave benefits, the recipients are not allowed to work more than 30 hours per month, which was also the case for the child-rearing allowance (Kluge and Tamm, 2013). The leave uptake of fathers before the reform was below 5%. Figure 1.2 shows the share of fathers taking parental leave benefits since the introduction of the reform until 2019. The share of fathers taking up any parental leave was around 21% in 2008, which has more than doubled in 2019, with a male share of 44%. The introduction of the new parental leave benefit system and the two “daddy months” is associated with a considerable increase in the share of fathers’ uptake. The red line in Figure 1.2 shows the average length of parental leave of fathers in months ². On average, fathers take around 3.5 months of parental leave. The share of fathers taking parental leave for longer than two months has been rising since 2015 (Samtleben et al., 2019). The share of fathers only taking two months of leave decreased from 77% in 2010 to 72% in 2018 (Samtleben et al., 2019). Even though fathers’ participation in parental leave has increased since the reform, mothers are still the ones that take more extended periods of parental leave.

²For the years 2008 to 2015, the average duration of fathers’ terminated benefit payments are shown by year of birth of the child. From 2016 onward, this is the expected duration of benefits for benefit payments of fathers who received parental benefits in the reporting year under review, as the entitlement and application period has not yet been completed.

Marital benefits and services

Not only do family policies such as parental leave or the entitlement to public child-care affect the labor market participation, but marriage and the accompanying benefits shape spouses' employment. In Germany, married couples benefit from the joint taxation splitting system, wherein their combined taxable income is halved, and the tax code is applied to the reduced income (Fink, 2020). The resulting tax liability is then multiplied by two to calculate the total tax liability for the couple (Fink, 2020). Couples who follow the traditional "male breadwinner model" or have a wife who only works part-time and contributes a small portion to the household income, receive the most significant tax benefits due to the progressive tax schedule (Kreyenfeld and Geisler, 2006). Moreover, the partner not working or not employed in a job liable to social security job enjoys co-insurance in the health insurance (Fink, 2020). Further, the non-working partner receives access to derived rights from the public pension insurance system of the employed spouse in the form of a survivor's pension (Rentenversicherung, 2023). These income taxation benefits, along with health and pension insurance access, tend to reinforce a single-earner or one-and-a-half-earner family model.

Labor market instruments to reconcile work and family

Numerous labor market policies aim to facilitate work-life balance and reconcile work and family demands. One approach is through flexible working-time arrangements, such as working-time accounts, which are often presented as solutions to overcome barriers to women's employment (Abendroth, 2022; Wanger and Zapf, 2022; Hegewisch and Gornick, 2012). The first paragraph of the Working Hours Act (§ 1 Abs. 1 Nr. 1 ArbZG) sets the aim to improve the conditions for flexible working hours regulations. Collective agreements or individual employment contracts regulate the design of the flexible work arrangement. Unions and work councils play a crucial role in implementing flexible work arrangements, but also firms are interested in offering flexible arrangements to be attractive employers (Jacobi, 2023).

Another avenue for work-family reconciliation lies in part-time work, regulated by the Part-Time and Fixed-Term Employment Act (Teilzeit- und Befristungsgesetz). While originally not intended to facilitate the balance between work and family responsibilities, it has evolved into an essential tool for addressing these issues. Starting from 2001, workers within organizations employing 15 or more individuals have been granted the entitlement to request decreased work hours without providing explicit justifications; declines are permissible solely on valid operational grounds (Wanger, 2004). The lack of provisions for employees to return to their previous hours resulted in many remaining in part-time employment despite the willingness to work full-time (Schrade, 2019). This situation led to the creation of bridge part-time (Brückenteilzeit) on January 1, 2019, allowing employees to adjust their working hours for a certain period (Schrade, 2019).³ Part-time work has a dual impact, enabling mothers to enter the labor market post-childbirth while potentially impeding the movement toward full-time work or de-familialization (Daly, 2011).

A specific form of marginal part-time employment, known as “mini-jobs”, is particularly common among married women or mothers. Mini-jobs were introduced in 2001 as part of the labor market reforms and unemployment policies under the name “Agenda 2010” by the Red-Green government (Pfau-Effinger and Reimer, 2019). This form of non-standard employment restricts monthly earnings up to a certain level (520 Euros) and exempts employees - but not employers - from taxes and social insurance contributions (Konle-Seidl, 2021). Unlike formally employed workers, mini-jobbers are not eligible for health insurance or unemployment benefits Pfau-Effinger and Reimer (2019). Among mini-jobbers, 60% are women, and two-thirds of them live in households with a full-time working spouse (Wanger, 2015). Pfau-Effinger and Reimer (2019) identify several determinants for women working in mini-jobs, including low education, being younger than 32, living with children below the age of two, and being married.

³The eligibility criteria for the bridge part-time include the following prerequisites: a) Prospective employees must apply for the bridge part-time at least three months in advance; b) applicants should have a minimum of six months of continuous employment with the company; and c) only companies with more than 45 employees have to offer bridge part-time (BMAS, 2019).

The coverage of spouses in the health insurance of the main earner, as well as the joint income taxation splitting model for married couples, provides strong incentives for women to work only a few hours while offering low incentives to extend their working hours up to full-time (Konle-Seidl, 2021). Interestingly, the prevalence of mini-jobs among women with children in West Germany is higher compared to East Germany, reflecting traditional gender norms ingrained in the system (Fischer et al., 2015).

Summary

Reflecting on the evolving landscape of German family policies, the concept of multidimensionality helps to capture the current trends. On the one hand, positive changes in parental leave design, such as the inclusion of “daddy months”, signify progress toward gender equality (Daly, 2011; Saxonberg, 2013). Additionally, the guarantee of childcare facility access for each child indicates a step toward defamilialization (Daly, 2011; Lohmann and Zagel, 2016). On the other hand, the persistence of marital benefits and services reveals ongoing familialization tendencies, highlighting the legacy of the traditional male breadwinner system (Daly, 2011). The short-lived introduction of the “Betreuungsgeld”, a cash-for-care system, further accentuates a potential revival of the female homemaker role (Trappe et al., 2015). Hence, although the family and labor market social policies of recent decades have shifted in the direction of gender equality, they are not devoid of inconsistencies.

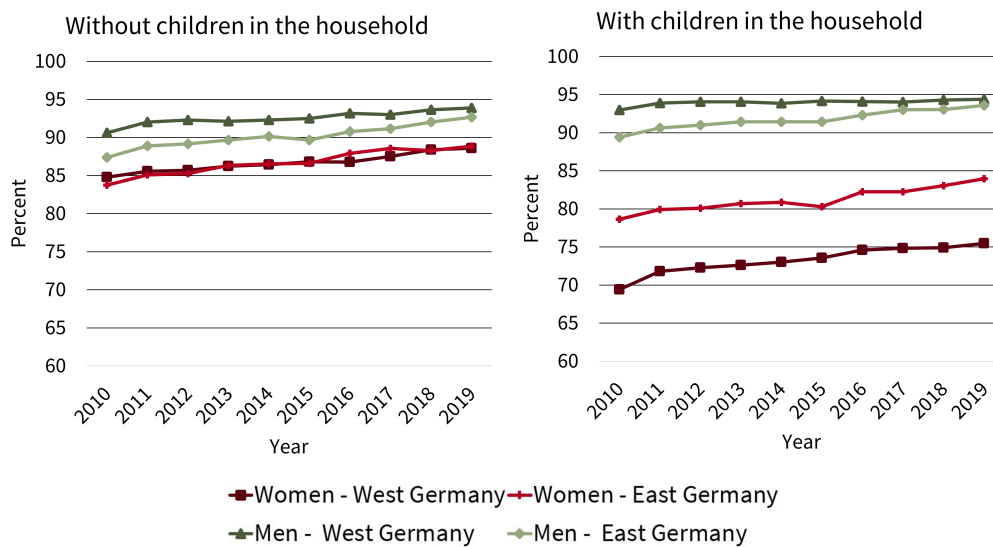
1.3.3 Empirical background on the division of labor in Germany

In the empirical chapters (2, 3, and 4) of this dissertation, I examine specific aspects of the division of labor among couples with children in their households. The following passage presents a general descriptive overview of the distribution of paid and unpaid work among couples, with and without children.

The division of paid work – an analysis based on the Microcensus

This section focuses on *paid* work and provides an overview of working hours and labor market participation for men and women and the division of paid work within couples. The analysis includes all different-sex couples aged 20-55 and differentiates between those with and without children under 18 living in the household. Based on the findings of previous studies presented in section 1.3.1, East and West Germany have different histories in terms of maternal employment. Therefore, I present the results separately for East and West Germany.

Figure 1.3: Annual employment rate of men and women in couple households separately for couples with and without children aged 0-17 in the household

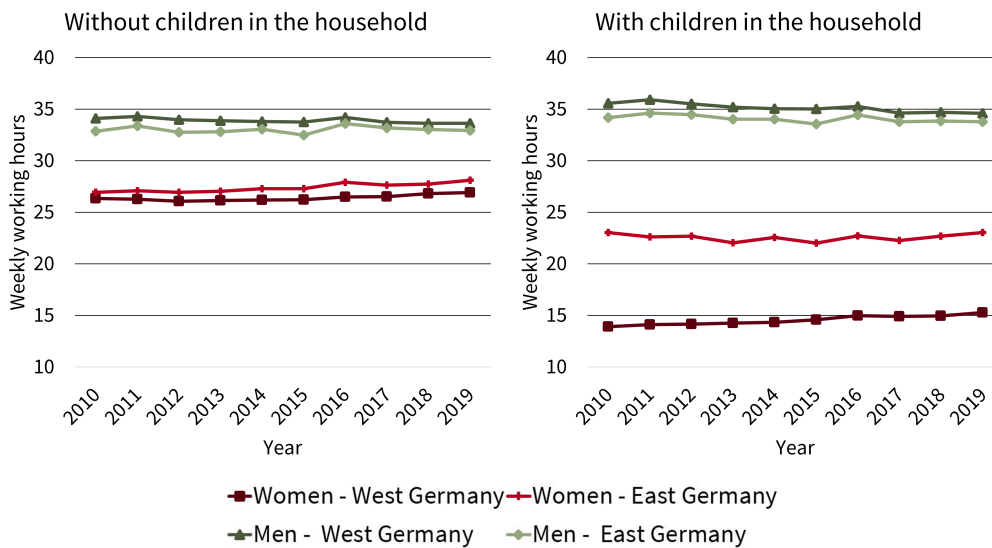


Microcensus 2010-2019. Own unweighted estimation. The sample consists of men and women aged 20-55 who live with a different-sex partner in the same household unit.

Figure 1.3 presents the employment rates for men and women in different-sex cohabiting unions, categorized by the presence of children in the household and separated for East and West Germany. The left panel of the figure shows the employment rates for couples without children, while the right panel displays the rates for those with children. For women without children, the employment rates in East and West Germany are similar and exhibit a matching pattern. In 2010, the employment rate for women stood at approximately 84%, which increased to 89% by 2019. On the other hand, the employment rates for men without children varied based on

regional context. In 2010, the employment rate was lower for men in East Germany (87%) compared to West Germany (91%), but by 2019, it had nearly converged at 93%. While women continue to have a slightly lower employment rate than men in 2019, the difference is small, with only 4 percentage points. However, the disparity between men and women becomes more pronounced when children are present in the household. In 2010, the employment rate for mothers in West Germany was 69%, while it was 93% for fathers. The gap was narrower for East German parents, with an employment rate of 78% for mothers and 89% for fathers. By 2019, although the difference between East and West German mothers' employment rates remained at 9 percentage points, the rates increased to 75% for West German mothers and 84% for East German mothers. In contrast, fathers' employment rates in East and West Germany had converged to 94% in 2019.

Figure 1.4: Average weekly working hours for men and women in couple households separately for couples with and without children aged 0-17 in the household

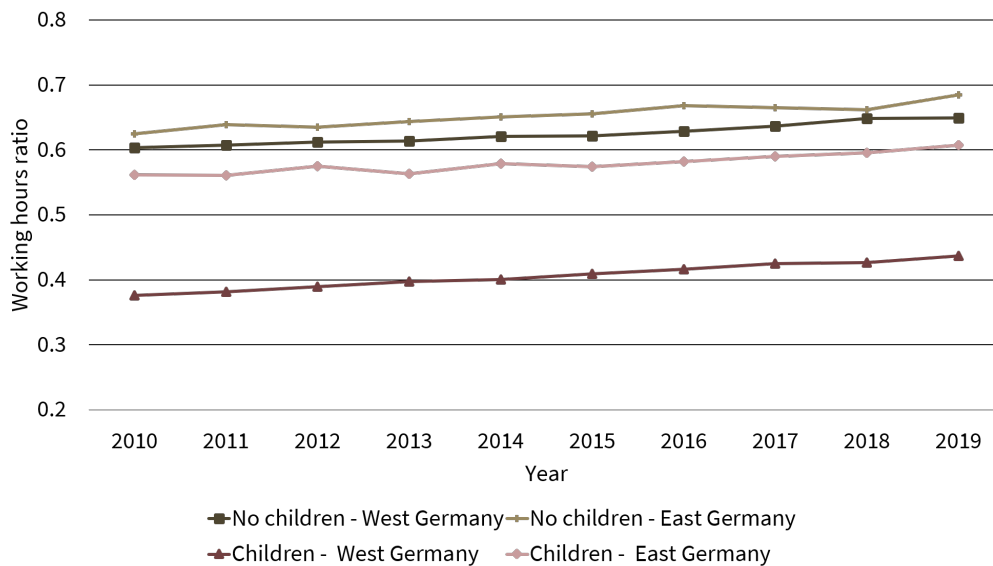


Microcensus 2010-2019. Own unweighted estimation. The sample consists of men and women aged 20-55 who live with a different-sex partner in the same household unit. The working hours are operationalized as the *actual* weekly working hours. The actual working hours for non-working persons are coded as 0 working hours.

The gendered disparities in working hours are apparent when comparing men and women, as depicted in Figure 1.4. Even in the sample without children, considerable differences between genders emerge. On average, women work 27 hours per week,

while men work 34 hours. Moreover, women in East Germany tend to work slightly more hours than their counterparts in West Germany, whereas the reverse pattern is observed for men. When examining households with children, gender differences become more visible. In West Germany, mothers work an average of 15 hours per week, with a slight increase of one hour over time. In East Germany, mothers work an average of 23 hours per week, with minimal variations over time and no clear trend. In contrast, fathers in both regions work an average of 35 hours per week, with a minor tendency towards declining working hours among West German fathers. These findings underscore the persistent gender disparities in working hours, particularly in households with children. Women tend to work fewer hours than men across all contexts, and the gap becomes more substantial when children are in the household.

Figure 1.5: Working hours ratio in couple households separately for couples with and without children aged 0-17 in the household

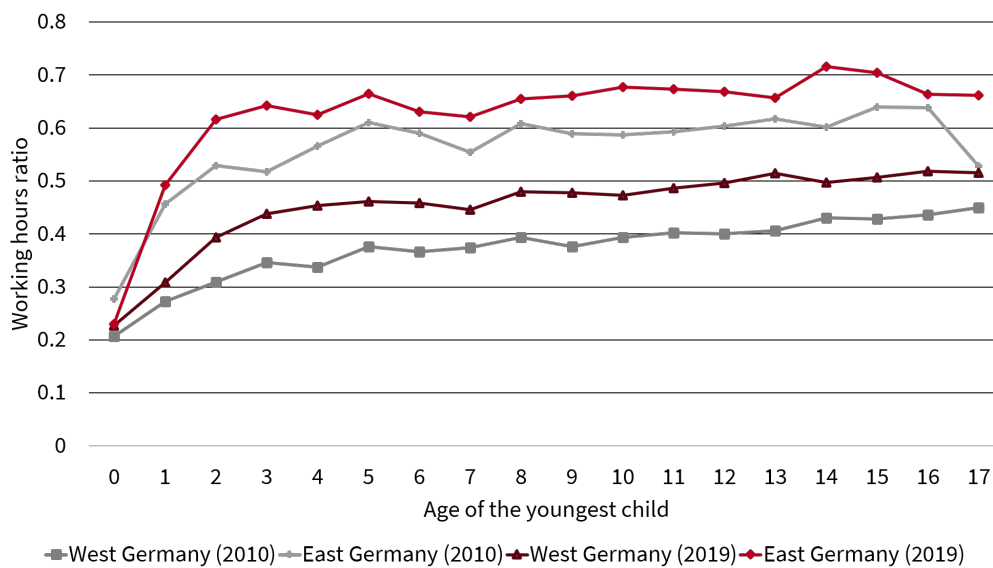


Microcensus 2010-2019. Own unweighted estimation. The sample consists of cohabiting different-sex couples aged 20-55. The working hours ratio is based on the *actual* weekly working hours and is calculated by dividing the lower amount of working hours by the higher amount in the couple. The actual working hours for non-working persons are coded as 0 working hours.

The working hours ratio serves as a measure of the division of paid labor within couples. It is derived by dividing the lower amount of working hours by the higher amount (a detailed description of the measurement can be found in Chapter 2, p.99).

A ratio of 1 indicates an equal distribution of work, while a ratio of 0 suggests that one partner is not engaged in paid employment and the other is. Figure 1.5 displays the working hours ratios for different-sex couples with and without children. Among couples in West Germany, a substantial difference of 0.2 exists between couples with and without children. West German couples with children follow a relatively unequal division of paid work, with a ratio of 0.40. East German couples without children exhibit the most equal division of labor with a ratio of 0.65. Across both regions and all couple types, the average working hours ratio shows an upward trend over time, indicative of a movement towards greater gender equality. This trend is primarily driven by an increase in women's working hours, as depicted in Figure 1.4.

Figure 1.6: Working hours ratio in couple households by the age of the youngest child in 2010 and 2019



Microcensus 2010-2019. Own unweighted estimation. The sample consists of cohabiting different-sex couples aged 20-55. The working hours ratio is based on the *actual* weekly working hours and is calculated by dividing the lower amount of working hours by the higher amount in the couple. The actual working hours for non-working persons are coded as 0 working hours.

Figure 1.6 presents the working hours ratio specifically for parents, categorized by the age of the youngest child in the years 2010 and 2019, and separated for East and West Germany. In the year of childbirth, couples divide paid work unequally. Two years after the birth of a child, West German couples in 2019 exhibited a working hours ratio of 0.4. However, it takes 16 years after childbirth for these couples to

achieve a working hours ratio of 0.5, which resembles a scenario where one partner works full-time with 40 hours and the other works part-time with 20 hours per week. In contrast, East German couples demonstrate a more equal division of paid work, reaching a working hours ratio of 0.5 within a year after childbirth and exceeding 0.6 after three years. Importantly, the working hours ratios in both regions are higher in 2019 compared to 2010, indicating progress towards greater equality.⁴

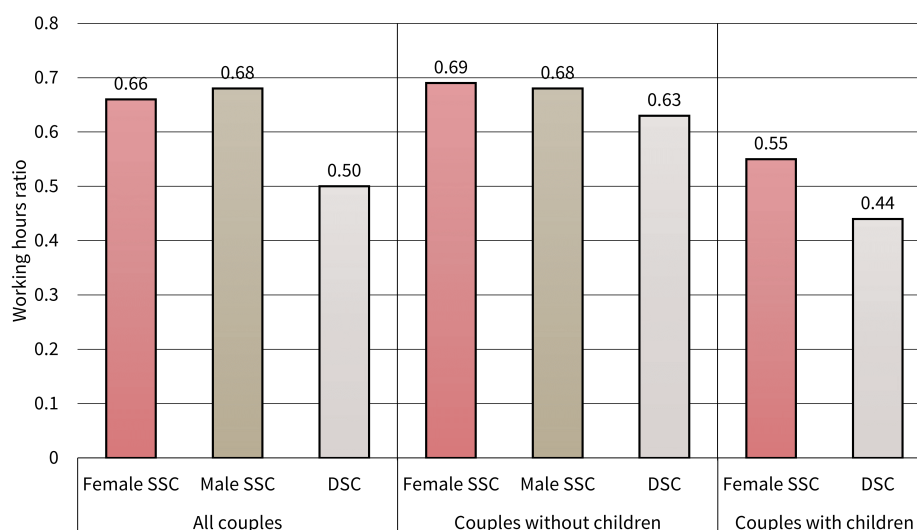
A comparison of same-sex and different-sex couples

As illustrated previously, the division of paid work among parents, particularly in West Germany, tends to be fairly unequal, with women working fewer hours than men. However, an important aspect to consider is how this division compares to same-sex couples. Understanding the dynamics of same-sex couples is valuable due to the increasing legal recognition of these partnerships and the growing number of children being raised within these families (Evertsson et al., 2021). This analysis examines the division of paid labor in same-sex and different-sex couples, encompassing couples with and without children under 18. However, due to the limited sample size ($n=37$), male same-sex couples were excluded from the analysis of couples with children. Figure 1.7 presents the working hours ratios for same-sex and different-sex couples, both with and without children. Interestingly, male and female same-sex couples tend to have a more equal division of paid work compared to different-sex couples. The disparities between the two types of couples are less pronounced for those without children, with a working hours ratio of 0.69 for same-sex couples versus 0.63 for different-sex couples. However, the differences are more noticeable for couples with children, with a working hours ratio of 0.55 for female same-sex couples versus 0.44 for different-sex couples.⁵

⁴For a more comprehensive understanding, please refer to the average working hours by the age of the youngest child, displayed in the Appendix A (see Figure A.1 for women's average working hours and Figure A.2 for men's average working hours).

⁵The Appendix A contains additional information on employment rates (Figure A.3) and average weekly working hours (Figure A.4). The figures reveal that employment rates are similar across all couple types in the childless sample. However, there are gender differences in average working hours, with women in different-sex couples having the lowest average working hours and men in different-sex couples having the highest. These disparities become more pronounced among parents.

Figure 1.7: Working hours ratio for different couple types with and without children aged 0-17 in the household



Microcensus 2010-2019. Own unweighted estimation. The sample consists of cohabiting same-sex and different-sex couples aged 20-55. The working hours ratio is based on the *actual* weekly working hours and is calculated by dividing the lower amount of working hours by the higher amount in the couple. The actual working hours for non-working persons are coded as 0 working hours.

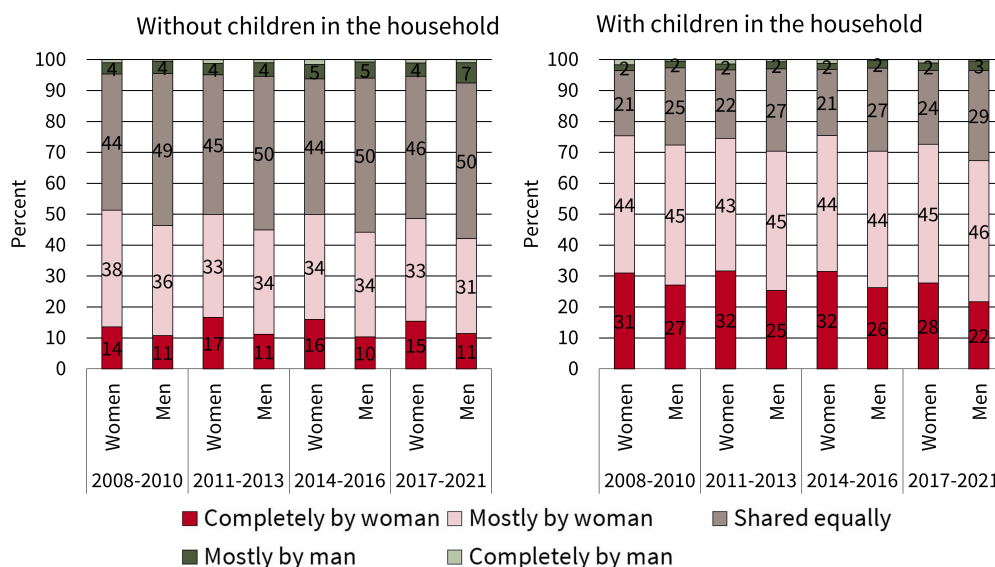
The division of unpaid work – an analysis based on pairfam

This section sheds light on the division of *unpaid* work, such as housework and childcare. For the division of unpaid work, I compare cohabiting couples, aged 20-55 years, with and without children under the age of 18 in the household. The data stems from the annual pairfam survey, a multi-actor study launched in 2008 (Brüderl et al., 2022). The pairfam study follows a cohort design (1971/1973, 1981/1983, 1991/1993), with 12,000 respondents in the first wave. The sample consists of cohabiting different-sex couples aged 20-55.⁶

Figure 1.8 compares the distribution of household chores among couples with and without children, considering both male and female perspectives. The results are grouped into four time periods to capture potential changes over time. For couples without children, household chores are relatively evenly divided, with approximately 47% of couples sharing responsibilities. This division remains stable over time. However, the situation changes drastically for couples with children. Only around

⁶Due to small sample size, I only include different-sex couples in the analysis.

Figure 1.8: The division of housework by gender of the respondent for couples with and without children aged 0-17 in the household across time



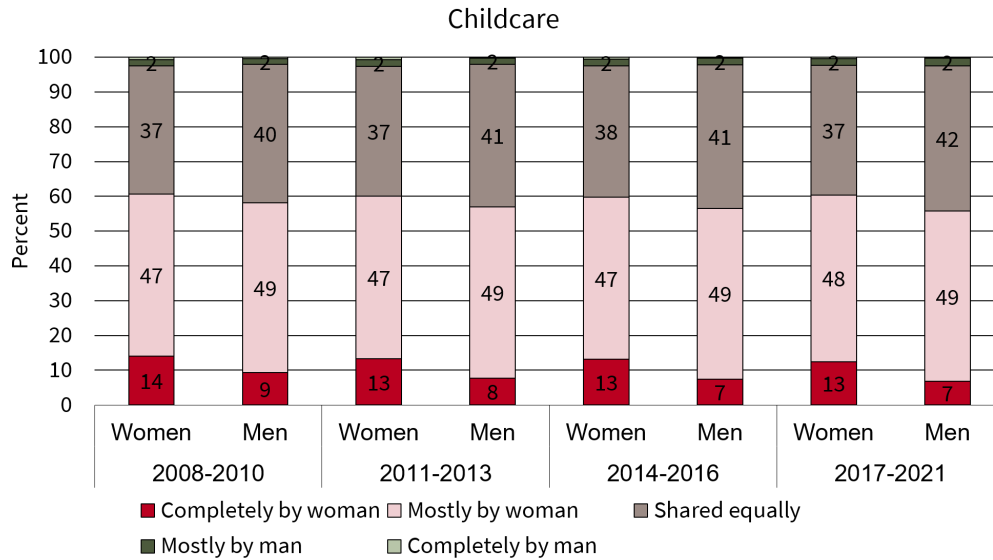
Pairfam, wave 1-13, unweighted own calculations. The sample consists of cohabiting different-sex couples aged 20-55.

one-fourth of these couples share household chores equally, while in nearly three-quarters of cases, mothers carry the majority of housework. Notably, the proportion of couples sharing chores equally has increased over time, while the percentage of couples where mothers exclusively perform household tasks has declined from the 2008-2011 period to the 2017-2021 period. Regardless of parenthood status, in only a small portion of couples, the male partners contribute more to housework than their female partners.⁷

Figure 1.9 illustrates how childcare is divided between male and female partners. Women take on the majority of care work, accounting for 57% from the male partner's perspective and 60% from the female partner's perspective. About 40% of couples share care work equally, while only in 2% of the couples, the male partner is

⁷Additional figures in the Appendix A show other aspects of the division of unpaid work, such as the division of shopping for groceries in Figure A.5. Shopping is primarily shared equally among non-parents, but the share of couples with the female partner running more errands is higher for couples with children. Figure A.6 displays the division of repairs around the house, mainly done by the male partner independent of the parenthood status. Lastly, the division of the management of finances is displayed in Figure A.7. This task is mostly shared equally. A higher share of male partners is responsible for the finances among parents than couples without children.

Figure 1.9: The division of childcare by gender of the respondent for couples with children aged 0-17 in the household



Pairfam, wave 1-13, unweighted own calculations. The sample consists of cohabiting different-sex couples aged 20-55.

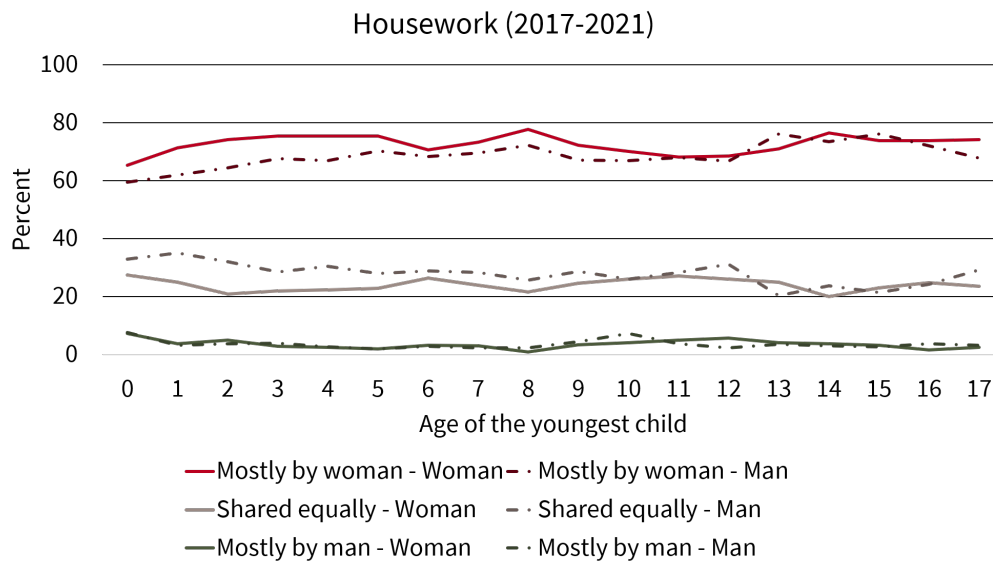
the primary caregiver.⁸ There is only a very light trend towards a more equal division of childcare for the male partners' reports visible across time.

Examining the division of housework among parents concerning the age of the youngest child reveals a consistent pattern on an overall basis (see Figure 1.10). Women are primarily responsible for household tasks, regardless of their child's age. Overall, this division of labor remains consistent. Interestingly, as the youngest child grows older, the reported contributions of men and women in housework tend to converge.

In contrast, looking at the division of childcare by the age of the youngest child, a different pattern emerges (see Figure 1.11). In the year of childbirth and the year afterwards, women are responsible for the majority of childcare duties in about 70% of couples. As the youngest child reaches the age of 2 and beyond, the share of childcare carried out by mothers gradually decreases, and couples begin to share childcare duties equally. By the time the child reaches the age of 14, more couples

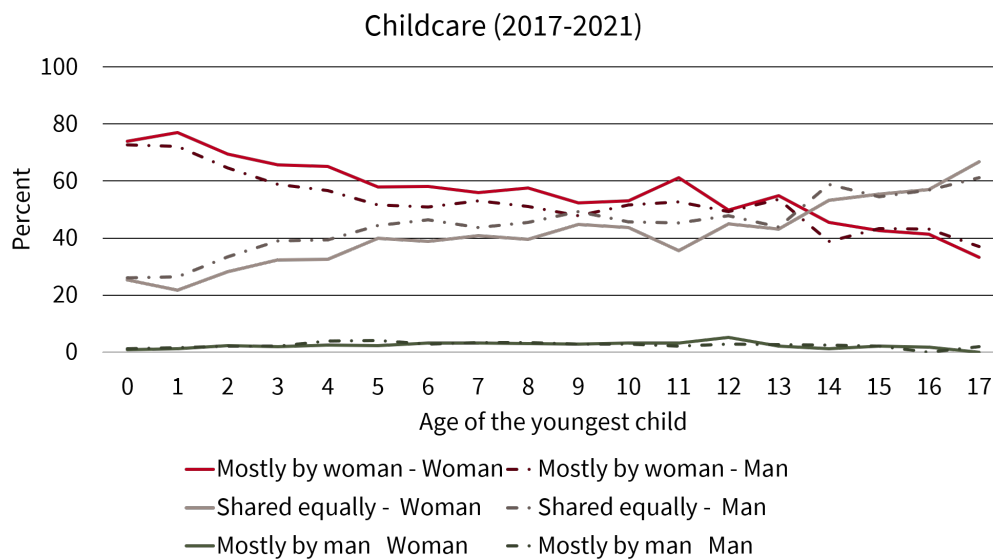
⁸In the Appendix A Figure A.8 and A.9 show differences in the division of unpaid work separated for East and West Germany. Couples in East Germany divide housework (Figure A.8) slightly more equally and childcare (Figure A.9) more visibly equally than couples residing in West Germany.

Figure 1.10: The division of housework by the age of the youngest child for the time period of 2017-2021



Pairfam, wave 10-13, unweighted own calculations. The sample consists of cohabiting different-sex couples aged 20-55.

Figure 1.11: The division of housework by the age of the youngest child for the time period of 2017-2021.



Pairfam, wave 10-13, unweighted own calculations. The sample consists of cohabiting different-sex couples aged 20-55.

share childcare equally compared and the share of couples where the mother remains the primary caregiver decreases.

Measuring the division of labor

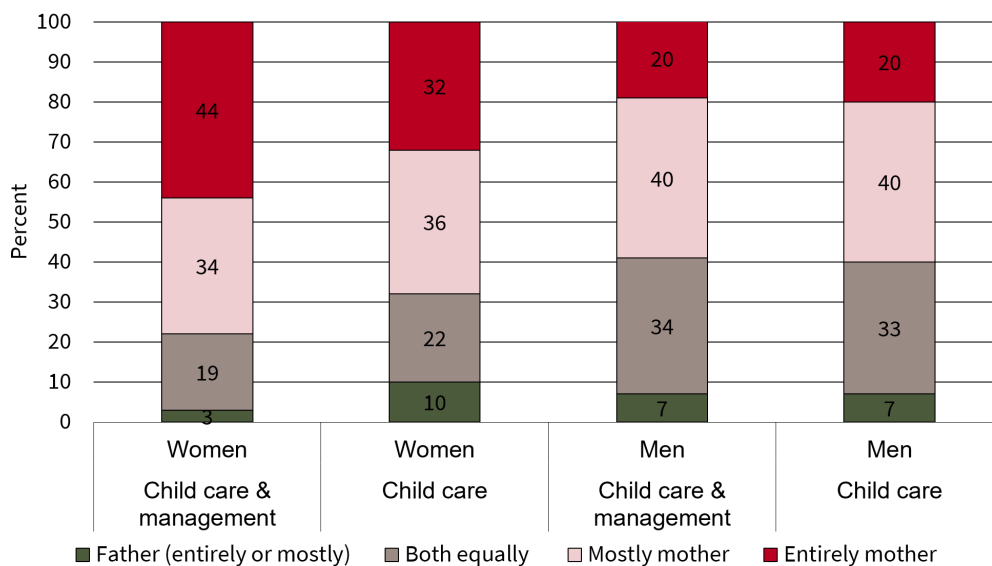
Researchers have paid attention to assessing the division of labor in couples. Various methods have been utilized, each with its advantages and disadvantages. The measurements can generally be classified into two categories: time-based measurements and measurements focusing on the division of labor within households. Time-based measurements involve time-use diaries and stylized questions (Kan, 2008; Kan and Pudney, 2008; Bonke, 2005). Time-use diaries require respondents to record activities and time spent during the present or past day in diary slots. Stylized estimates, commonly used in survey interviews, ask about time spent on activities during a “regular” weekday. Stylized estimates are cost-effective and yield higher response rates but are prone to recall biases. Respondents may struggle to remember exact times, calculate accurately, or recall typical day activities. Reporting only total hours and the inability to report simultaneous activities can lead to over- or underestimation and exceed 24 hours. Calculating each partner’s share based on time spent in specific activities can be done when surveying both partners in the household. Bonke (2005) compares time-use diaries and stylized questionnaires for paid and unpaid work. Minor differences exist for paid work, but disparities are evident for unpaid work. Gender differences emerge, with men being less reliable than women in evaluating their labor market work, while women tend to underreport their contribution to unpaid work more frequently. Similarly, Kan (2008) finds smaller differences between diary-based estimates and stylized questions for women compared to men regarding housework. With children present, the measurement gap widens for both genders.

Other measures ask respondents directly about their division of household tasks as a relative assessment. Respondents are typically asked to assess how they and their cohabiting partner divide specific tasks, often using a 5-point scale to indicate the primary performer or if the task is shared equally. One advantage of measuring perceived time compared to time-use batteries or diaries is its sensitivity to the subjective dimension (Carrasco and Domínguez, 2015). Unlike time-use batteries

that aim to capture objective data, measurements of perceived time acknowledge the subjective nature of individuals' perceptions. Studies examining the relative measure of the division of housework reveal an egocentric bias, where respondents report higher shares of housework compared to their partners' reports (Geist, 2010; Carrasco and Domínguez, 2015).

Despite the growing number of household surveys, most survey research is designed with only one person in the household filling out the questionnaire. However, this approach can be problematic when capturing accurate information about the division of unpaid labor, as answers may differ between partners. As discussed in the description of the division of unpaid work in Section 1.3.3, the responses from men and women do not fully align. Various mechanisms may contribute to this misalignment: a) respondents may exhibit an egocentric bias, favoring themselves in their responses; b) social desirability could play a role, as respondents may adjust their reported division of labor to conform to societal norms; c) lack of communication between partners about the division of labor may result in respondents being unaware of what the other partner contributes.

Figure 1.12: The division of childcare during the Coronavirus crisis



Source: IAB-HOPP waves 2-7, own weighted estimates.

In the IAB-HOPP panel study, an interesting example emerged where respondents were asked about the division of childcare using slightly different wording. They were asked about the general division of childcare without specific details. In a separate item, they were asked about the division of work related to childcare/management tasks, such as homework, hobbies, appointments, birthday presents, and clothes. Both questions were answered on a 5-point scale, ranging from “(almost) entirely by my partner” to “(almost) entirely by me”. Figure 1.12 displays the responses from female and male respondents to both questions. The findings show that female respondents’ reports of the division of childcare were sensitive to the wording of the question, while no significant differences were observed for male respondents. The inclusion of specific management tasks appeared to introduce greater discrepancies in responses between male and female participants compared to simple questions addressing the division of childcare.

1.4 Previous research on the division of labor

In this section, I offer an overview of prior research examining the division of unpaid and paid work within couples, specifically focusing on Germany. After a general introduction to the existing findings based on time-use studies, I focus more in-depth on three key topics. First, I describe the results of how the division of labor evolves throughout the transition to parenthood. Second, I present studies concerning the division of care work during the COVID-19 pandemic. Third, I briefly outline research on the division of labor within same-sex couples. Lastly, this section ends with a summary of the findings and identification of research gaps.

1.4.1 Time-use for paid and unpaid work by gender

As outlined in Section 1.3.3, there are various approaches to measuring the division of labor in couples. In the following section, I present results derived from time-use studies. When examining the total volume of both paid and unpaid work, there is no significant difference on workdays, with men working an average of 11 hours and 18 minutes and women working 11 hours (Samtleben, 2019). However, the composition of the workload varies between men and women, reflecting a gender-traditional division of labor. Specifically, women spend 5 hours and 30 minutes on paid work, while men dedicate 8 hours and 38 minutes to gainful employment (Samtleben, 2019).

The division of housework and childcare responsibilities is gender-specific, with women predominantly being responsible for domestic work. This observation holds across various surveys and studies, including time-use surveys (Steinbach and Schulz, 2022; Klünder, 2017), self-assessment of domestic labor hours (Samtleben, 2019), and surveys employing relative measures, for example, analyzed by Dechant et al. (2014). The difference in the time spent in unpaid work by gender gives a vivid impression of the gendered patterns and is also crucial to understand how relative measures of the division of labor come together. Particularly when describing time trends of changes in the division of labor in couples, this might be either due to an

increase in the men's time spent in those tasks or a decrease in the time women spent in those tasks.

For example, in 1992, the men's share of unpaid work was 31% and had risen to 37% in 2016, which is not attributed to an increase in men's time spent on routine housework, but women spend less time on cleaning and cooking (Samtleben, 2019). Women spend on average 3 hours per day on cooking, cleaning and doing laundry in 1992, while women in 2016 spend 2 hours on a regular weekday on these tasks. Men increased from 35 minutes in 1992 to 52 minutes in 2016 (Samtleben, 2019). As also supported by other studies, the convergence of the housework shares of men and women is mostly driven by women doing less and that some tasks have been outsourced (Altintas and Sullivan, 2016; Sullivan et al., 2018). The lower time investments of particularly women could be due to the use of household-related services, the family's standards and expectations may have been lowered (e.g., only ironing selected pieces of clothes or using wrinkle-free textiles) (Klünder, 2017). Similarly, the eating habits have changed with higher consumption of food outside of the home but also the of convenience products has risen (Klünder, 2017).

In contrast to the division of labor within household chores, the time parents spend with their children has increased over the past few decades for both mothers and fathers (Dotti Sani and Treas, 2016; Pailhé et al., 2021; Steinbach and Schulz, 2022). From the early 1990s, mothers' daily time spent with children has risen from 2 hours and 10 minutes to 2 hours and 27 minutes in 2013 (Steinbach and Schulz, 2022). Similarly, fathers have increased their time with children from 42 minutes in 1991 to 56 minutes in 2013 (Steinbach and Schulz, 2022). Although there is a slight convergence in the amount of time mothers and fathers, spend with their children, the nature of their caregiving tasks remains largely gendered. Fathers tend to engage in more "quality" time, such as playing with the child, while mothers predominantly undertake routine childcare tasks (Schulz and Engelhardt, 2017; Steinbach and Schulz, 2022).

In recent decades, there has been a shift in how people allocate their time, with a reduction in housework and an increase in women’s paid working hours. Despite the convergence in the overall time spent on domestic labor by men and women, the specific tasks they undertake exhibit distinct gender patterns. Women still take on the responsibility for time-sensitive tasks that demand frequent execution, including cooking, cleaning, and driving children around. On the other hand, men tend to focus on more time-flexible activities, such as gardening and playing with the children.

1.4.2 The division of labor in the transition to parenthood

Becoming a parent is a significant life event that brings about many changes, particularly in how couples allocate their responsibilities. Family research drew mainly on cross-sectional research, but with the establishment of several household panels and simultaneously the development of longitudinal data analysis, several studies started to observe the period when partners become parents and how this transition affects the division of labor. These studies unanimously observe a “traditionalization of housework” within marriage or partnership, indicating that the proportion of household and family work performed by women increases throughout the relationship (Dechant et al., 2014; Grunow et al., 2012; Wengler et al., 2009; Kühhirt, 2012).

Using data from the Bamberg Panel Study of Married Couples, a 14-year panel study of relationship and family development in West Germany, Grunow et al. (2012) employ event-history models to investigate the factors influencing changes in the spousal division of housework over time. The findings indicate that couples initially begin their marriage with a relatively equal division of routine household tasks, but over the observation period, the husbands’ share of housework decreases. Moreover, the birth of a child seems to trigger a shift towards a more traditional division of labor. Even as the children grow older and mothers re-enter the labor market, there

is no indication of a readjustment towards a more egalitarian model of housework division.

The German Longitudinal Family Survey is one of the earliest household panel studies conducted in the German context. Klaus and Steinbach (2002) utilized data from survey waves in 1988 and 1994 to examine the impact of the birth of a child on the division of labor within couples. Their findings indicate that the arrival of a child leads to a shift towards a more traditional division of labor between partners. The study reveals that this shift does not appear to be reversed when the children eventually leave the household. Based on the survey waves of 1994 and 2000 of the same survey, Huinink and Reichart (2008) utilize ordered probit-models to analyze changes in the traditionalization index, which measures the extent of tasks performed by the female partner. Their findings, consistent with Klaus and Steinbach (2002), highlight that the birth of a child is associated with a significant increase in the traditionalization of household labor. Both studies also consider the employment status of partners and its role in explaining shifts in the division of unpaid work. Huinink and Reichart (2008) conclude that only when both partners have equal participation in the labor market (both partners working full-time) the traditionalization trend seem to be mitigated. However, as also observed by Klaus and Steinbach (2002), this equal participation does not yet result in a fully egalitarian division of labor but rather represents the closest approximation to it.

The German Socio-Economic Panel (SOEP), an annual household survey initiated in 1984, offers a valuable resource for assessing the long-term trends in the division of labor within couples. Through pooled regression analysis spanning the years 1985 to 1993, Gershuny et al. (2005) show that employment is linked to a decrease in an individual's share of housework. Interestingly, they also find that men's response to their partner's employment status appears to be delayed (Gershuny et al., 2005). Based on data from the years 1985-2008 of the SOEP, Kühhirt (2012) reveals that parenthood leads to a long-term increase in women's housework and childcare time, accompanied by a significant decline in market hours, regardless of

household income and pre-birth resource levels. In contrast, the birth of children has minimal impact on men's time use, even if they are financially dependent on their partner. Women with a similar or higher income than their partners before childbirth tend to increase their working hours more than women with lower incomes. However, the increase in paid working hours for mothers is gradual and slow. Using fixed-effects models, Schober (2013) investigates the relationship between paid and unpaid work from 1990 to 2010. Her findings reveal that when mothers re-enter the labor market after childbirth with full-time employment, they tend to reduce their share of housework. However, when they return to part-time positions, the division of household labor remains largely unaffected. In another study, Schober and Zoch (2019) explore the moderating effect of parental leave on the division of labor. They examine data from 1992 to 2012 and focus on the length of maternal and paternal leave take-up in relation to the division of domestic labor after childbirth, using OLS regressions with a lagged dependent variable. The results indicate that in dual-earner couples where mothers take longer leaves, there is a greater shift towards a gender-traditional division of unpaid work. On the other hand, when fathers take longer leaves (more than 6 months), couples are more likely to exhibit an equal division of housework and childcare, which aligns with previous study findings (Bünning, 2015).

The studies mentioned above examine the relationship between employment and the distribution of unpaid work. They suggest that societal norms and gender ideologies can impact the significance of gendered economic resources (Kühhirt, 2012; Dechant et al., 2014). The German Panel Analysis of Intimate Relationships and Family Dynamics (pairfam), in particular, offers a valuable opportunity to analyze how gender ideologies influence the division of labor during the transition to parenthood, as it provides data on gender ideologies for both partners. The research conducted by Daniela Grunow and Natalie Nitsche has been particularly influential in the German setting. For instance, Nitsche and Grunow (2016) use multi-level random effects growth curve models to examine trajectories of couples' housework

distribution over time and find that an egalitarian gender ideology of both partners significantly predicts more egalitarian division trajectories, while absolute and relative resources seem to have no effect on the division of housework over time. Another study by Nitsche and Grunow (2018) investigates the combined gender ideologies of both partners and relative resources on the division of unpaid childcare. They find that the childcare share of fathers is largest in couples where both partners support female employment, and lowest in couples where both partners are unsupportive of female employment, suggesting that partners' ideological pairings are relevant for their labor division.

After reviewing various studies that use different sets of panel data and time frames, it is evident that when couples become parents, they tend to divide unpaid work less equally than before. Earlier studies primarily focused on economic factors, highlighting the influence of employment and relative household income in shaping the division of unpaid work during the transition to parenthood (Klaus and Steinbach, 2002; Huinink and Reichart, 2008; Gershuny et al., 2005; Schober, 2013). However, some aspects of the division of labor during this transition are not sufficiently explained by economic factors. For example, Kühhirt (2012) found that the birth of children has minimal impact on men's time use, even if they are financially dependent on their partner. Studies that considered gender ideologies as explanatory factors supported the importance of attitudes in explaining the division of labor. As a result, seminal studies (Grunow et al., 2012; Kühhirt, 2012; Schulz and Blossfeld, 2006) generally concluded that the arrangement of the division of labor within partnerships is less driven by rational calculations but is primarily shaped by societal gender role expectations.

1.4.3 The COVID-19 pandemic: Backlash or chance for equality?

The COVID-19 pandemic posed numerous challenges, especially for families with young children. At the time, the public debate centered on whether increased child-

care needs due to school closures were undoing the progress made in recent years toward gender equality. However, most research in the German context refuted the “re-traditionalisation hypothesis”. Comparing the division of labor in households during the COVID-19 pandemic to the division before, studies find that the relative division of care remained mostly unchanged (Hank and Steinbach, 2021), but that both mothers and fathers increased their absolute time spent in childcare similarly (Kreyenfeld and Zinn, 2021). Based on a convenience sample, Kohlrausch and Zucco (2020) emphasized that women have been more seriously affected by the pandemic than men, but at the same time, they showed that the gendered division of care in couple households remained largely unchanged. The results based on a non-probabilistic survey again suggest that the division of care became somewhat more equal during the early phase of the pandemic but not in later periods (March-August 2020) (Hipp and Bünning, 2021). Similarly, Jessen et al. (2022) examine a period from spring 2020 and winter 2021, covering several lockdowns, showing that although gender inequality in the division of care work increased to some extent at the beginning of the pandemic, it returned to the pre-pandemic level in the second lockdown almost nine months later.

While on the aggregate level, empirical studies did not uncover shifts towards a re-traditionalization during the pandemic but still identified that experience varies considerably by various factors such as remote work, working in an essential occupation, unemployment, or short-time work. Based on the findings of the Corona Study of the National Educational Panel Study (NEPS), Zoch et al. (2021) examined the relationship between remote work and the gendered division of care. They showed that remote work by the father was positively associated with a more gender-equal division of care, whereas remote work by the mother increased the chances of “mother care only”. Additionally, mothers were more likely to take unpaid leave to care for their children than fathers (Zoch et al., 2021; Möhring et al., 2021b).

1.4.4 The division of labor in same-sex families

Plenty of studies demonstrate that same-sex couples divide unpaid and paid work more equally than different-sex couples (see for example: Goldberg and Perry-Jenkins, 2007; Jaspers and Verbakel, 2013; Aldén et al., 2015; Bauer, 2016; Jepsen and Jepsen, 2015; Lazarus and Mandel, 2023). Comparing male and female same-sex couples, van der Vleuten et al. (2021) demonstrate in cross-country comparison that female same-sex couples spend less time in paid work than male same-sex couples, but both divide paid work equally.

As in the case for different-sex couples, research on the distribution of relative resources in same-sex couples and how it affects the division of labor is inconclusive. Some studies suggest that same-sex couples are more similar in terms of occupational prestige and income levels (Moberg, 2016; Patterson et al., 2004), while others show that they are less similar in education and age than different-sex couples (Lengerer and Schroedter, 2022; Schwartz and Graf, 2009; Jaspers and Verbakel, 2013). Regarding the predictive power of relative resources, Solomon et al. (2005) find that being in a same-sex union is a stronger predictor of an equal division of labor than similar income levels. A study by Oreffice (2011) contends this finding by showing that shifts in bargaining power also affect the division of household labor in same-sex couples. Bauer (2016) finds, regarding the educational constellation, that male same-sex and different-sex heterogamous couples divide housework less equally than their homogamous counterparts. Interestingly, when the educational level between the partners diverges in female same-sex couples, the level of equality in housework sharing rises (Bauer, 2016). The author finds a similar pattern for the income contribution on housework sharing: When partners contribute to the household income on a similar level the housework division is more equal for different-sex couples, but insignificant for male same-sex and has a negative association for female same-sex couples refuting the relative resource hypothesis (Bauer, 2016). The results of the study by Lazarus and Mandel (2023) shows a bit of a different picture. They find a similar pattern for male and female same-sex couples in a linear relationship with the

higher the economic contribution of a partner to the household, the less they devote to housework, which is in line with economic theories. In contrast, for different-sex couples economic theories are not sufficiently explaining the division of household since when women are the main breadwinners they still do a substantial housework share and more than predicted by economic theories (Lazarus and Mandel, 2023). Empirical findings for bargaining theories are mixed and do not fully explain the division of labor in same-sex couples, but seem to be generally a better predictor for (male) same-sex couples than for different-sex couples (Lazarus and Mandel, 2023).

In the division of labor, same-sex couples can not simply rely on the ever-present gender roles that defines their care or work arrangements. This is even more the case in the transition to parenthood. For example, Evertsson and Boye (2018) examine the division of parental leave in Sweden, finding that the birth mother in same-sex couples takes more leave than the social mother, but still the division is more equal than for different-sex couples. Similarly, based on qualitative interviews with female same-sex couples with children, Patterson (1995) found that biological mothers are more involved in childcare, while non-biological mothers spend more time in gainful employment.

1.4.5 Summary and research gaps

This section has provided an overview of various studies examining the division of labor in couples. The results of time-use studies in Germany show that there has been a convergence in the overall time spent on domestic labor by men and women in recent decades. But men's and women's unpaid tasks are still different, with women taking over more time-demanding and inflexible tasks.

Studies focusing on the transition to parenthood find that when couples become parents, they shift towards a less egalitarian division of labor, with women taking over care responsibilities and men functioning as financial providers of the family. One limitation of the previous studies is that although they are based on household surveys, they do not specifically focus on whether men and women in couples report

the same division of labor. This potential reporting discrepancy between partners can impact the accuracy of the evaluations and may lead to over- or underestimation of the effects. In response to this, Chapter 4 of this thesis explicitly addresses this gap by examining and describing the division of unpaid work during the transition to parenthood from both partners' perspectives. Additionally, it analyzes the likelihood of reporting gaps emerging among different education and employment groups. By considering both partners' reports, this chapter aims to provide a more comprehensive and accurate understanding of the division of unpaid labor in couples during this critical life phase.

The COVID-19 pandemic presented various challenges for families, particularly those with young children. Studies investigating the division of domestic labor during this period revealed that both fathers and mothers increased their time spent with their children. The pandemic also triggered significant changes in the labor market, with remote work becoming more widespread and the implementation of the short-time work program. In response to these circumstances, Chapter 3 of this thesis addresses the effects of the short-time work scheme on the division of childcare within couples.

In Germany, research on the division of labor in couples with children has mainly focused on different-sex couples. Studies conducted in other countries like the US, Netherlands, and Sweden reveal that same-sex couples tend to divide work more equally. However, quantitative research on the division of labor in same-sex couples with children in Germany is still lacking. Chapter 2 of this thesis addresses this gap in the literature by comparing the division of paid labor within female same-sex and different-sex couples with children in their households.

1.5 Data and methods

1.5.1 Data

Microcensus

The analyses presented in Chapter 2 are based on data from the German Microcensus, which is an official and representative survey conducted annually. This survey interviews 1% of the entire population, providing valuable insights into various aspects of society. Since respondents are legally obliged to participate in the Microcensus, the unit nonresponse is usually very low ($<3\%$). The interviews are typically carried out in person (PAPI or CAPI), but respondents can also request a written questionnaire. The survey's primary units are households, and all individuals within the selected households are interviewed. A household is defined as a residential and economic community where individuals living together also manage their households together. To retain sufficient case numbers for analyzing the division of labor in same-sex couples with children in the household, I aggregate the 10 most recent years (2010-2019). I analyze data from the Scientific Use Files, which are de facto anonymized, and comprise 70% sub-samples of the original data.

IAB-HOPP

For the analytical endeavor in Chapter 3, we utilized data from a highly frequent online person panel (HOPP) provided by the Germany Employment Agency (IAB), focusing on the topic of “life and employment in times of Corona” (Volkert et al., 2022). The IAB-HOPP survey extensively covers the impact of the COVID-19 pandemic on employment and related issues, including aspects such as home office usage, participation in short-time work program, sharing care responsibilities due to closed care facilities, overall well-being, and health. Our analysis is based on data collected from four waves: wave 2 (June 2020), wave 3 (July 2020), wave 4 (August 2020), and wave 5 (September/October 2020). This survey draws on a stratified random sample of the Integrated Employment Biographies (IEB), which provides individual-level administrative information on employment, unemployment, participation in measures,

and job search. The sample selection process involved stratification based on age, gender, employment status, and region. Initially, 200,000 individuals were invited to participate in the survey during wave 1; among them, 11,311 people completed the comprehensive online study in full. Subsequently, respondents were invited by email or mail for all following waves. In wave 5, the sample was refreshed once.

Pairfam

Chapter 4 utilizes data from the German Panel Analysis of Intimate Relationships and Family Dynamics (pairfam) from waves 1-13 (Brüderl et al., 2022). This longitudinal panel study commenced in 2008 and involved the random sampling of three distinct age cohorts: adults, adolescents, and young adults born between 1971 and 1973, 1981 and 1983, and 1991 and 1993, respectively. The participants' ages ranged from 15 to 17, 25 to 27, and 35 to 37 during the first wave. The study selected approximately 4,000 participants for each cohort, resulting in approximately 12,400 individuals. These respondents, referred to as anchor persons, grant permission for interviews with their partners, children, and parents, if available. This multi-actor design allows to collect panel information on both the anchors and relevant alteri. In wave 1, only anchors and their partners were interviewed to reduce the respondent burden. From wave 2 onwards, the pairfam team implemented the complete multi-actor design. The anchor population comprises individuals living in German private households with sufficient proficiency in the German language. The panel design of the study as well as the thematic focus on partnerships with a multi-actor design offers an excellent opportunity to study the division of labor from both partners' viewpoints across the transition to parenthood.

1.5.2 Methods

This thesis employs quantitative methods to investigate the division of labor within couples and examines various theoretical mechanisms. Each empirical chapter provides a descriptive analysis of the data, with different data analysis approaches used across the chapters.

Chapter 2 utilizes pooled linear ordinary least square (OLS) regressions to examine potential differences in the division of paid work between female same-sex and different-sex couples. These models incorporate an indicator for same-sex relationships and various socio-demographic variables. Predictive values from the regression analysis are used to present the results of interaction terms and explore regional variations.

Chapter 3 presents a descriptive analysis of the changes in the division of labor over time. Subsequently, we utilize multinomial logistic regression to analyze the outcome variable, which follows a multinomial scale. This variable captures whether fathers reduced, maintained, or expanded their childcare share. The main models incorporate an indicator for short-time work and socio-demographic control variables. Furthermore, we estimate an interaction model to explore whether the impact of short-time work varies across educational categories. The results are reported in average marginal effects.

The final empirical chapter commences with a comprehensive depiction of the reporting gaps in housework and childcare during the transition to parenthood, alongside the division of domestic work. The binary outcome variable indicates whether the partners' reports align or diverge. Logistic regression models are employed separately for housework and childcare perception gaps, controlling for employment status and control variables. To account for potential effect variations, interaction terms for employment status, gender, and education are included in the models. The outcomes of the interaction models are visualized as predicted probabilities.

As in all empirical chapters, persons are observed multiple times, and robust standard errors are estimated in all specifications. By utilizing various data sets, I am able to present numerous facets and nuanced aspects of the division of labor within couples in Germany.

1.6 The cumulative dissertation

1.6.1 Summary of the three empirical chapters

This dissertation delves into the topic of how couples with children divide paid and unpaid work. The first chapter outlines the theoretical framework, gives an overview of family policy in Germany, and compares the division of paid and unpaid labor between couples with and without children. The subsequent section provides a summary of the three empirical chapters (Chapters 2, 3, and 4) and discusses how they add to the current research.

The focus of Chapter 2 is the division of *paid* work in couples with children. The empirical novelty of this paper is the comparison of female same-sex and different-sex couples. This chapter contributes to the field by discussing the applicability of established division of labor theories to same-sex couples and, furthermore, exploits the historically shaped gender culture of East and West Germany. The third chapter (Chapter 3) then turns to the division of *unpaid* work – namely childcare. The intersection of the paid working life with the father’s contribution to childcare is a key concern of researchers and policymakers. We contribute to the literature by exploiting the sudden nature of the COVID-19 pandemic and using the short-time work scheme as a “natural experiment”. We show that fathers in short-time work take over more care responsibilities than fathers continuously employed with regular working hours. The last empirical chapter (Chapter 4) investigates the transition to parenthood and how this phase is accompanied by differences in the reporting of the division of unpaid labor (housework and childcare) of both partners. This analytical chapter’s originality is examining socioeconomic confounders in reporting mismatches in the division of labor. By showing that perception gaps are lowest in couples where the woman is employed or highly educated, I take socio-economic factors into account and highlight the importance of a dyadic perspective on the division of labor in couples. Taken together this dissertation sheds light on different aspects of the division of labor in couples with children in the household.

Research Paper 1: The division of paid labor: A Study of female same-sex and different-sex parents in Germany

The second chapter⁹ of this dissertation investigates the division of paid labor in households with children, comparing female same-sex and different-sex couples in Germany. I hypothesize that same-sex couples tend to have a more equal distribution of paid work, which can be attributed to a combination of factors, including the absence of the female-male juxtaposition and greater commitment to equity norms. To test the hypothesis, I conduct a descriptive and multiple regression analysis using ten years of the German Microcensus (2010-2019), including 460 female same-sex couples and 363,192 different-sex couples. The analysis reveals that mothers in same-sex couples work more hours than mothers in different-sex couples. Furthermore, female same-sex couples tend to divide paid work more equally than their different-sex counterparts. Educational differences between partners are associated with a higher inequality level than in homogamous couples. When comparing regional differences between East and West Germany, I find that same-sex and different-sex couples in East Germany divide paid work similarly equally, while different-sex couples in West Germany have specialized work arrangements. These findings highlight the role of context and point to the importance of cultural explanations for the division of labor in same-sex couples.

Research Paper 2: The division of childcare during the coronavirus crisis in Germany: How did short-time work affect fathers' engagement?

Chapter 3 is co-authored with Michaela Kreyenfeld (Hertie School) and Sandra Dummert (IAB) and examines how participation in the short-time work scheme affected the gendered division of childcare during the COVID-19 crisis in Germany.¹⁰ In contrast to the previous chapter, Chapter 3 focuses on childcare as a component of unpaid work and investigates the intersection of paid and unpaid work. We use the so-called short-time work (Kurzarbeit), which has been one of the central policies used to combat the economic and labor market repercussions of the coronavirus

⁹This paper is submitted to a scientific journal.

¹⁰This paper is published in the *Journal of Family Research* in 2022.

pandemic in Germany, to examine whether and, if so, how the growing prevalence of short-time work has affected care patterns. For the analysis, we use data from the IAB-HOPP, a longitudinal study monitored by the German Institute for Employment Research (IAB). The analytical sample includes couples with children aged 12 and younger. We employ multinomial logistic regressions in which the outcome variable is the change in the division of care work from a period before to a period during the coronavirus crisis (June to October 2020). We find that among men, receiving short-time work benefits resulted in more gender-equal care patterns. The level of education moderates the positive effect of short-time work on the division of childcare. Fathers with low or medium education are more likely to increase their childcare share when receiving short-time work benefits compared to fathers with high education. However, we also find that participating in the short-time work program had no strong or significant effects on the gendered division of care among women. The evidence from this study suggests that men's working time is a major vehicle to change the gendered division of care in couple households.

Research Paper 3: The division of housework and childcare from a dyadic perspective: Discrepancies between partners' reports across the transition to parenthood

Chapter 4 takes a longitudinal and dyadic perspective to investigate the differences in reporting the division of labor across the transition to parenthood.¹¹ There is a large body of research on the gendered division of domestic work, but differences between women's and men's reported contributions to childcare and housework remain a puzzle. In this chapter, I examine the perception gap in the division of housework and childcare to understand how this gap changes across the transition to parenthood and how it is influenced by women's and men's socioeconomic characteristics. I use data from the German Family Panel (pairfam). The survey's multi-actor design allows me to include both partners' reports on the labor division. The analytical sample consists of cohabiting different-sex couples who had their first child during

¹¹This paper is invited for a revise and resubmit in *Demographic Research*.

the observation period (n=384). I employ logistic regressions to study the factors that determine the perception gap. In line with prior research, I find a substantial perception gap (around 30% for housework; around 25% for childcare). Further, the factors influencing perception gaps are strongly gendered. Employment and education do not appear to affect perception gaps among men but among women: Perception gaps are lowest in couples where women are employed or highly educated. This study demonstrates a gendered association between employment status and educational levels and the prevalence of a perception gap across the transition to parenthood. Researchers should be aware of a potentially increased risk of mismatches in these reports, especially when surveying employed men.

1.6.2 Concluding remarks

This dissertation studies the division of paid and unpaid work in couples with children. The overarching research question is how parents divide paid and unpaid work and under which circumstances the division of labor changes. In line with previous research, this dissertation provides evidence that couples with children generally divide paid and unpaid work unequal, with women shouldering a larger share of the unpaid work than men. However, this dissertation sheds light on several new key findings on factors associated with – and circumstances under which couples realize a more egalitarian division of labor.

First, the gender composition of the couple plays a crucial role, as evidenced by female same-sex couples, who display a more equal division of paid work compared to different-sex couples. Delving into the conceptual nuances of gender and sex is crucial for understanding the theoretical mechanisms explaining the labor division within couples. Though often used interchangeably, sex and gender are distinct concepts (West and Zimmerman, 1987). Sex refers to a determination made through the application of biological criteria for classifying persons as females or males, while gender encompasses the social behaviors and interactions that create and sustain the meanings associated with sex (West and Zimmerman, 1987). In different-sex

couples, it is challenging to differentiate between behaviors driven by biological sex differences and those influenced by socially constructed gender differences, leading to confounding factors. To address this, Goldberg and Perry-Jenkins (2007) propose that same-sex couples provide a unique opportunity to study gender independently of “biological sex”, serving as a “test case” to examine gender differences while “controlling for” sex. The finding of Chapter 2 that same-sex couples show a more balanced distribution of paid work, even after accounting for economic factors and childcare demands, emphasizes the crucial role of gender composition in shaping the division of labor within couples.

Second, the regional context emerges as a significant factor influencing the division of paid work for different-sex couples, with couples in East Germany displaying a more egalitarian distribution than their counterparts in West Germany. Several factors might contribute to the more egalitarian division of labor in East Germany among different-sex couples. For example, in East Germany, the support for maternal employment is higher than in West Germany, which might be because full-time employment of mothers was common in the GDR (Rosenfeld et al., 2004). In combination with full employment, public childcare facilities were widespread in the GDR, characterizing a state-carer model (Pfau-Effinger and Smidt, 2011). Consequently, even today, East Germany maintains higher childcare coverage than West Germany (Zoch and Schober, 2018). This welfare arrangement, with its more gender egalitarian culture and enhanced provision of childcare, appears to foster a more balanced division of paid labor in East Germany compared to West Germany.

Third, the disruption in fathers working time with the implementation of the short-time work scheme during the COVID-19 pandemic showed a noticeable shift towards greater gender equality in the division of care. In the short-time work program, the Federal Employment Agency subsidized the forgone wages due to lockdowns and, for example, the shut-down hospitality industry. Employee benefits depend on their previous earnings and whether they have children. The short-time work shares similarities with parental leave but without the element of self-selection

into it. When fathers find themselves with more available time and a greater need for childcare, they engage more in caregiving tasks.

The three empirical chapters of this dissertation demonstrate that three important factors contribute to a more equal division of labor. These include the gender composition within couples, gender egalitarian welfare state structures, and the disruption in working times for fathers.

This thesis challenges theories of the division of labor in multiple regards. To begin with, the division of labor theories are primarily constructed to explain the gendered division of labor in different-sex couples and therefore neglect other family forms, such as same-sex couples. The new home economics approach proposes that the family utility is highest when couples follow a specialized division of labor, with one partner focusing on paid work and the other on unpaid work. However, this thesis shows that same-sex couples divide work more equally after controlling for relative resources, such as education and age differences. The most promising explanation is that same-sex couples hold either more egalitarian norms and/or are, due to the absence of the female-male role polarization, better capable of achieving a more egalitarian division of labor. Indeed, research on same-sex couples calls theoretical assumptions based on different-sex couples into question, but as Evertsson et al. (2021) concludes has not yet resulted in the development of new theoretical frameworks within the broader field of family sociology. The reason for that may be due to unidentified mechanisms that produce diverse work and care patterns in same-sex and different-sex couples. By combining longitudinal qualitative interviews with quantitative longitudinal studies, researchers might gain insights into motivations and behaviors while achieving broader perspectives and testing theories (Evertsson et al., 2021).

Second, this thesis identifies the need for more dynamic models to analyze short-time disruption in the work life and their consequences for care work. According to new home economics the division of labor is set at the beginning of a relationship and is not modified throughout the relationship. Gender theories may be also less

effective in explaining individuals' reactions to changes, as they tend to be slower in adapting to new circumstances. It is important to note that the gender-deviance neutralization theory by Brines (1993) has been frequently employed to explain why women continue to assume the primary caregiver role in the face of fathers' job loss (Gough and Killewald, 2011; van der Lippe et al., 2018; Voßemer and Heyne, 2019). While job loss and short-time work share similarities, the latter does not directly threaten the male provider role. Therefore, when studying individuals' responses to sudden and involuntary changes, theories should incorporate a certain level of flexibility to account for these unique situations and their impact on the division of labor.

In conclusion, understanding the division of labor in couples is a complex and multifaceted phenomenon. While valuable insights emerge from various theoretical perspectives, each theory only addresses specific aspects and tends to focus on one explanatory factor. To progress, adopting an integrative framework with a multilevel approach might be promising. This approach recognizes the significant influence of norms at various levels, encompassing individual beliefs, interactions within couples, and broader societal and cultural influences (Risman, 2018; Dominguez-Folgueras, 2022).

In addition to its theoretical challenges, this dissertation produces methodological insight. In Chapter 4, I focused on the transition to parenthood and examined discrepancies in the reports of unpaid work division between male and female partners. Within the first two years after the birth of their first child, approximately 30% of couples reported differing divisions of housework, and 24% exhibited discrepancies in their reports of childcare distribution. Notably, these reporting gaps were not evenly distributed among groups, with the lowest predicted probability of perception gaps occurring in couples where the main respondent is a working mother with a higher educational level. This finding underscores the interconnectedness of paid work and the division of unpaid work, including how partners perceive and

report it. Thus, it highlights the importance of considering both partners' reports when analyzing the division of domestic work.

In this dissertation, I identify the factors that promote a more egalitarian division of labor. Further, I challenge current theories and offer perspectives for future research. Additionally, the importance of dyadic data analysis on a methodological level is emphasized.

Limitations and avenues for further research

This dissertation is not free from limitations and incompleteness like any other scholarly work. While many of these limitations have already been comprehensively discussed within their corresponding chapters, I strive to minimize redundancy by providing only the most significant limitation for each chapter.

In the second chapter, it was not feasible to distinguish biological or stepparents or identify the birth mother in the case of same-sex couples due to the design of the Microcensus. This differentiation would have been important in testing another theoretical strand of explanations – namely the identity formation. It would have allowed for examining similarities and differences between birth mothers in same-sex and different-sex couples, as well as the roles of non-birth mothers and fathers. For instance, Evertsson and Boye (2018) demonstrated that even in same-sex couples, the birth mother takes more parental leave and invests slightly more in childcare than the non-birth mother. Exploring how this dynamic manifests in paid work presents an intriguing avenue for future research. Unfortunately, due to the small case number in the dataset, I could not analyze male same-sex couples with children in the household. Previous studies have highlighted differences between female and male same-sex couples in their responses to shifts in bargaining power and how this relates to the division of unpaid work (Lazarus and Mandel, 2023; Bauer, 2016). In particular, considering cultural theories like the doing gender perspective (West and Zimmerman, 1987), including male same-sex couples in the analysis would have been highly promising. However, it's worth noting that qualitative studies exist that

examine the division of labor in same-sex unions. To complement these qualitative insights, future surveys should consider over-sampling certain groups to allow for quantitative analysis. This would provide a more comprehensive understanding of the division of labor within same-sex couples.

Due to the ad-hoc design of the IAB-HOPP survey, Chapter 3 relies on retrospective data regarding the division of childcare before the COVID-19 pandemic. This type of data collection is prone to recall bias, where respondents may remember their past care division more positively than it was (Hipp et al., 2020). If that was the case, the coronavirus pandemic had an even more positive effect on the gendered division of care than we measured with our data. Furthermore, it is important to note that the survey does not specifically focus on household-level data. Despite providing valuable insights into the gendered division of care within households and some selected information about partners information, it did not allow us to examine the interaction of partner characteristics at the household level. Moreover, a related challenge arises from the lack of sufficient information regarding whether the partner was employed in a frontline occupation or working remotely, which could have influenced the division of care within the household. The COVID-19 pandemic has brought forth an unprecedented and worldwide care crisis, shedding light on the division of care and the well-being of parents. Consequently, future research must delve into the long-term effects of the lockdown measures. Specifically, exploring the impact on the well-being of both parents and children and investigating whether the changes in the division of unpaid work endured beyond the pandemic would be of great importance.

The last empirical chapter is limited in the analysis by the small case numbers. Therefore, it was not possible to further differentiate the employment status of the respondent or to adopt a couple-level measurement of the earning constellation as particularly most mothers of young children are not active in the labor market in the year of the birth of the child. One promising idea to bypass this problem is to take the pre-birth employment constellation of the couple into account which would

allow to take a full dyadic approach. Although this study provides first evidence that the occurrence of perception gaps across the transition to parenthood is elevated for male, employed, and highly educated respondents, this needs to be further tested within a larger sample. The analysis in Chapter 4 presents an important initial descriptive contribution, providing a captivating landscape for future research. One intriguing avenue to explore is investigating the connection between differences in partners' reports regarding the division of labor and their communication or conflict behavior. Additionally, delving into more severe scenarios, such as examining the intentions or actual dissolutions of relationships, could shed further light on this topic. Another interesting path for future research is conducting a cross-country comparison. Since studies on the perception gap have mainly focused on single-country analyses, comparing different contexts would yield valuable insights into whether couples report the division of labor congruently or not based on variations in family policy contexts. This comparative approach would offer valuable knowledge on how different societal contexts influence how couples report their division of labor.

Considering the entire dissertation, few limitations exist alongside promising paths for potential future research. As this thesis relies on externally collected survey data with a repeated cross-sectional or panel design, the measurement of the division of unpaid work leaves room for improvement. In datasets like pairfam and IAB-HOPP, the division of labor is assessed using response categories such as “almost entirely by my partner”, “mostly by my partner”, “about half and half”, “mostly by me”, and “almost entirely by me”. However, these categories may not adequately capture shifts in gender role behavior and the fluidity observed in modern parenting dynamics. Utilizing only five categories to map the division of labor limits the ability to provide a nuanced description of mismatches and may potentially underestimate the perception gap. Incorporating time-use data for both parents would offer a more detailed understanding of the division of care within the household.

In line with prior research that examines housework and childcare as distinct entities due to their varying levels of desirability, this thesis focuses primarily on

analyzing these specific aspects while remaining incomplete concerning other forms of unpaid work such as shopping, managing finances, or gardening. However, routine housework and, to some extent (routine) childcare are often considered the least desirable tasks, characterized by high workloads and limited flexibility. As such, the omission of a comprehensive examination of other types of unpaid work in this study may not significantly undermine the findings. Supporting this perspective, descriptive evidence in the Appendix A corroborates that tasks such as shopping or financial responsibilities tend to be more equally shared among partners.

Related to this, I could mostly take visible forms of unpaid work into account. The aspect of household management is included in one empirical chapter as part of the invisible or cognitive aspects of unpaid work. Recently, there has been growing recognition of the cognitive dimension of unpaid work, encompassing activities such as planning, monitoring, and decision-making regarding household and family tasks. These cognitive aspects have been identified as another facet of inequalities in unpaid work (Damingler, 2019; Dean et al., 2022). Since women predominantly shoulder cognitive labor, it could be a key factor in understanding the disparities in the reported division of labor between men and women. Women may consider these cognitive tasks, such as scheduling or planning the meals, as part of childcare or housework, while their male partners may be unaware of these dimensions. Consequently, further research is necessary to explicitly examine the role of invisible tasks and their broader impact on the gendered division of labor.

Another aspect that should be acknowledged, which also opens up avenues for future research, is the limited consideration of a broader unpaid work arrangement. It is important to recognize that couples with higher household incomes may opt to outsource routine housework, thereby reducing their overall workload. This outsourcing practice is likely to be socially stratified, meaning that mothers in low-income families face heavier caregiving burdens and may also encounter more challenging bargaining situations with their partners. To fully understand the disparities expe-

rienced by different socioeconomic groups, it's essential to examine the dynamics of outsourcing and how it affects the division of labor.

Moreover, it is worth noting that this dissertation primarily focused on cohabiting different-sex couples and their division of labor. While same-sex couples were analyzed in Chapter 2, other family forms remained largely unobserved. Future research should incorporate the division of childcare within separated families, particularly those involved in joint physical custody arrangements. Additionally, it is essential to acknowledge that surveys often lag behind in capturing the realities beyond those of the majority population. The diversification of family forms is an ongoing process, with emerging forms such as co-parenting arrangements without being in a romantic relationship, as well as polyamorous and queer families. In order to capture a more comprehensive understanding of the division of labor, quantitative research should be more inclusive and able to adapt to changing family dynamics.

Finally, an emerging demographic change that holds promise for further research is the focus on couples with migration experience. As of 2021, 27% of the German population either migrated to Germany themselves or had one parent who migrated to the country (Statistisches Bundesamt, 2023b). While I consider migration background as a control variable in the empirical chapters, the small case numbers hinder separate analysis. The field of research on migrant women's participation in the labor market is expanding, and it has revealed a dual disadvantage they face due to discrimination against their immigrant status and gender (for Sweden: Grönlund and Fairbrother, 2022). However, studies on the division of unpaid labor in migrant or intermarried couples are still scarce and relatively new (see, for example, studies on housework: Fendel and Kosyakova, 2023; Nutz et al., 2023). As norms are an influential explanation of how couples distribute tasks, it is also crucial to investigate how the gender ideologies prevalent in the country of origin influence the division of household labor (Nutz et al., 2023). Exploring the link between paid work, the potential double disadvantage women face, and how this relates to the division of domestic labor would be an essential and worthwhile endeavor.

Policy implications

The findings of this dissertation confirm the persistence of a traditional division of labor in couples with children, wherein mothers primarily shoulder domestic responsibilities while fathers predominantly engage in full-time market work. However, Chapter 3 reveals a notable shift during the COVID-19 pandemic when fathers became more involved in childcare during short-time work. Building on these findings, examining the impact of participation in the short-time work program can provide valuable insights into fostering changes in men's work patterns through providing paid leave benefits. Consequently, the implications of our research extend beyond the immediate context of the pandemic, offering a positive assessment of the potential effectiveness of paid leave policies. The 9th Family Report advocates for extending paid parental leave for fathers (BMFSFJ, 2021), and Chapter 3 provides empirical support for the argument that such measures are highly effective in encouraging fathers to become more actively engaged in their children's lives. Moreover, our findings indicate that this positive effect is not confined to highly educated fathers, who are often considered pioneers of involved parenting but can be applicable across different socio-economic backgrounds.

Another incentive structure that contrasts with parental leave regulations is the marital benefits such as joint taxation and co-insurance in health insurance. The tax advantages for married couples in Germany continue to incentivize a specialized division of labor, often resulting in the "one-and-a-half-earners" model. In this constellation, mothers are often marginally employed without social security, reinforcing their economic dependence on their husbands and further perpetuating the gendered division of unpaid care work. The need for a reform of the taxation system has been discussed, as highlighted in the 2nd Gleichstellungsbericht (Report on Gender Equality) by the German Federal Government (BMFSFJ, 2018, p.178-180). Such reform is long overdue to address the imbalances caused by the current tax structure and to eliminate the ambiguous incentives that contrast with other family policies.

The involvement of fathers in childcare has been increasing, but the division of housework remains relatively stable regardless of the age of the youngest child. During the transition to parenthood, mothers even tend to increase their share of housework responsibilities, as shown in Chapter 4. Routine housework, in particular, is known to be time-consuming and inflexible. To address this issue, cultural valorization of housework or the implementation of incentives for parents to redistribute work differently is necessary. A recent low-cost initiative discussed publicly in Spain is the introduction of an app designed to measure and monitor the division of housework and invisible cognitive tasks. As argued in this dissertation, the division of labor is not solely influenced by family policies but is also shaped by the gender culture of a country. Introducing an app like this could lead to a public discussion and convey to couples that an equitable distribution of work is desirable and should be the norm.

Another measure that could alleviate the care burden on women, though it may not directly encourage men's participation, is subsidizing household-related services. For instance, in 2004, Belgium introduced service vouchers to improve work-life balance by outsourcing domestic work and creating new jobs for low-skilled workers. The state subsidizes these vouchers, and they are tax-deductible. While the intention behind such measures is to improve the conditions of workers in the household service industry and shift these jobs from the informal labor market to positions with social security, it is important to note that these jobs are still predominantly performed by (migrant) women, raising concerns about global care chains.

In conclusion, this dissertation sheds light on the complex dynamics of the division of labor in couples with children. Although it underscores the persistence of gender inequality regarding the division of labor in German society and the ongoing struggle to overcome its ingrained normative structures, several factors contributing to a more egalitarian division of labor have been identified throughout this dissertation. It becomes evident that "the personal is political", with family policies playing a crucial role in moderating and influencing the division of labor. However,

the mixed signals from family policies imply that there is still a long road ahead to achieve gender equality.

2

The division of paid labor: A Study of female same-sex and different-sex parents in Germany

Abstract

This study aims to investigate the division of paid labor in households with children, comparing female same-sex and different-sex couples in Germany. I hypothesize that same-sex couples tend to have a more equal distribution of paid work, which can be attributed to a combination of factors, including the absence of the female-male juxtaposition and greater commitment to equity norms. To test the hypothesis, I conduct a descriptive and multiple regression analysis using ten years of the German Microcensus (2010-2019), including 460 female same-sex couples and 363,192 different-sex couples. The analysis reveals that mothers in same-sex couples work more hours than mothers in different-sex couples. Furthermore, female same-sex couples divide paid work more equally than their different-sex counterparts. When comparing regional differences between East and West Germany, I find that same-sex and different-sex couples in East Germany divide paid work similarly equally, while different-sex couples in West Germany have specialized work arrangements. These findings highlight the role of context and point to the importance of cultural explanations for the division of labor in same-sex couples.

Keywords: Same-sex couples, working hours, division of paid labor, Germany

2.1 Introduction

In modern societies, the division of labor among couples with children is a central concern for many families. One group that has been overlooked, particularly in quantitative research, is same-sex couples with children in the household. With the introduction of same-sex marriage, new possibilities for forming families have emerged, prompting questions about how these couples divide paid work and whether they differ from different-sex couples. Recent changes in the German welfare state have aimed to promote gender equality, increase women’s workforce participation, and encourage men’s involvement in childcare and domestic duties (Geyer et al., 2015). This study examines the division of paid work among female same-sex couples with children in the household and compares it to the division of labor observed in different-sex couples.

While a vast body of literature examines the division of labor in different-sex couples, research on same-sex couples, particularly in Germany, is scarce. Studies analyzing the division of labor among same-sex couples focus on unpaid work, e.g., housework or childcare. Research conducted in the U.S., Sweden, and the Netherlands, has shown that same-sex couples divide unpaid domestic work more equally compared to different-sex couples (Evertsson and Boye, 2018; Goldberg, 2013; Lazarus and Mandel, 2023). Further, Jaspers and Verbakel (2013) demonstrated with Dutch data that same-sex couples divide paid labor more equally than different-sex couples, and lesbian couples specialize less after marriage or childbirth. Research for the German case on the division of labor in same-sex couples is primarily qualitative, showing equal sharing of tasks in same-sex couples (Peukert, 2015; Schürmann, 2005).

In addition to providing valuable empirical data on the division of paid labor among same-sex couples, this study also contributes to the theoretical understanding of this issue. While same-sex couples are often seen as a “natural experiment” for testing existing theories, it is essential to recognize the complexities of this comparison (Badgett, 1995). For example, economic theories assume that the absence

of the comparative biological advantage means that female same-sex couples do not profit from specialization within the couple (Giddings, 2003). However, cultural theories highlight how same-sex couples are influenced by hetero-normative societal norms, particularly regarding parenthood and identity formation (Oerton, 1997).

Germany provides a particularly interesting context for examining the division of paid labor between couples because it is a welfare state with a long history of the male breadwinner model. At the same time, family policies in Germany have shifted towards the Scandinavian model, with a greater focus on gender equality. Family policies such as expanded public childcare and parental leave reforms have been implemented to increase maternal employment and encourage fathers to participate in childcare (Geyer et al., 2015). While these reforms have led to increased father involvement (Samtleben et al., 2021), women in different-sex couples still face reduced employment after childbirth, resulting in lower earnings or limited career prospects. (Aisenbrey et al., 2009; Budig and England, 2001; Gangl and Ziefle, 2009; Kleven et al., 2019). However, studies have shown that couples with children in East Germany tend to divide work more equally due in part to higher acceptance of maternal employment, greater availability of childcare facilities for children under three, and increased paternal involvement in childcare (Kreyenfeld and Geisler, 2006; Pfau-Effinger and Smidt, 2011; Wenzel, 2010). This exceptional case offers an opportunity to explore whether same-sex and different-sex couples divide paid work more similarly in different normative contexts. By examining the applicability of other theoretical explanations in the German context, this study contributes to a more nuanced understanding of the division of paid labor among same-sex couples.

The data used for the empirical analyses are drawn from the German Microcensus. Since the share of same-sex couples with children under 18 in the household is relatively low, a large sample size is needed to obtain robust outcomes. Further, as I want to examine the division of labor in couples, both partners' reports are required. The German Microcensus is a household survey annually collecting information from 1% of the population in Germany, providing suitable data for this

investigation. Combining Microcensus data from 2010 to 2019 provides a unique opportunity to examine the division of paid labor among couples. This analysis assesses how paid work is divided between female same-sex and different-sex couples. Due to the overall low proportion of male same-sex couples with children in the household, it is impossible to include male same-sex couples in the analysis. In the first step, I examine the paid working hours of mothers, controlling for the household composition and educational attainment of mothers. The analysis then turns to the division of paid labor, which is operationalized by the working hours ratio. Using pooled linear regressions, I analyze the division of labor in female same-sex and different-sex couples, accounting for compositional differences. Additionally, I examine differences in the regional context by incorporating an interaction term. The analysis presents average working hour ratios as outcomes, enabling an evaluation of work distribution within couples and the identification of patterns based on regional disparities and partnerships' gender compositions.

2.2 The German context

2.2.1 Regulations governing same-sex relationships

In recent decades the implementation of the legal acceptance of same-sex partnerships has changed fundamentally. The first country to legally formalize same-sex partnerships was Denmark in 1990. In 2001, Germany implemented the so-called Act on Registered Life Partnership (*Lebenspartnerschaftsgesetz*), taking a significant step towards legal equality between same-sex and traditional marriages. Although the introduction of the civil union was an attempt at equalizing different-sex marriages and same-sex unions, the legal status differed in many regards.

One option to form a family is adoption. Only in 2005 registered same-sex couples were granted the right to adopt their partner's biological child. Almost ten years later, successive adoption, meaning the adoption of the adopted child of the partner, was introduced. Only with the "Law introducing the right to marry people

of the same sex” coming into force in 2017 were same-sex couples granted the right to enter into civil marriage and thus to joint adoption. Registered partnerships can be converted to marriage upon application, and registering new partnerships is no longer possible. Non-married (same-sex and different-sex) partners can adopt their partner’s child when they have been in a stable relationship for at least four years or live together with the child, but they cannot jointly adopt a child.

Another way of family formation is medically assisted insemination. Medically assisted insemination or in vitro fertilization with sperm from a sperm bank is permitted for women regardless of their sexual orientation or partnership status. Although single women and women in same-sex couples in Germany are generally allowed to undergo medically assisted insemination, they face challenges in reality that heterosexual couples do not. Depending on the type of treatment and the number of attempts, the costs amount to several thousand euros (LSVD, 2023b). Costs for fertility treatments are generally not covered by statutory health insurance. Reimbursement is only provided under strict conditions with a diagnosed fertility disorder, and only the eggs and sperm from the respective couple may be used (homologous insemination). By definition, female couples are excluded because they are generally dependent on sperm donations from others. Only some private health insurance companies and the federal states of Rhineland-Palatinate, Berlin, Bremen, and Saarland provide subsidies for fertility treatments for same-sex couples. Egg donation and surrogacy are prohibited in Germany, which limits male same-sex couples’ options to adoption, foster parenting, or surrogacy abroad. Quantitative studies underline that the majority of same-sex couples want to have children with a mean of 1,6 children per person, which is only slightly below the desired number of children for different-sex couples (de Vries, 2020; BMFSFJ, 2021). Due to the legal regulations, particularly male same-sex couples are not able to fulfill their desire to have children. In summary, the possibilities for same-sex couples to form a family are relatively new. To date, there are still differences between same-sex and different-sex couples.

2.2.2 Reconciliation policies of paid and unpaid work

The division of labor in couples is impacted by the reconciliation policies, such as parental leave policies and public childcare services (Geist, 2005; Grunow and Evertsson, 2016). Germany has been classified as a conservative and familialistic welfare state regime, with a male breadwinner norm present. However, more recently, Germany has launched major family reforms which aim at supporting a “dual-earner-carer model”. Since 2005, regulations have been implemented to increase public childcare, particularly for children under three (Zoch and Hondralis, 2017). The provision of public childcare enables women to participate in the labor market (Zoch, 2020), thereby reducing the difference in the division of paid work within couples. An earnings-related parental leave scheme was introduced in 2007, under which parents are entitled to 67% of their previous earnings (65% as of 2011) for the first 12 months of parental leave. In addition, parents can receive 14 months of parental leave if the other parent, usually the father, takes two months of leave (Bünning, 2015). Parental leave benefits are tied to certain criteria: eligible individuals must live in the same household as the child and personally care for and raise the child. Legal parents, spouses of legal parents, registered partners of legal parents, and unmarried partners of legal parents, if they strive for stepchild adoption, are eligible for parental leave benefits. Parents in same-sex couples are, therefore, also eligible for parental leave benefits (LSVD, 2023a).

In addition, gendered caregiving patterns have shifted in recent years, with fathers taking on more childcare responsibilities than their counterparts in previous decades. Although the German welfare state is undergoing significant changes, the roots of the conservative and familialistic welfare state regime are deeply engrained in the system. The legacy of the male breadwinner system can still be seen in Germany’s income-splitting tax system and the country’s public health insurance system, which co-insures the non-working spouse. Tax benefits are also available to same-sex couples as part of a civil union from 2013-2017, which was incorporated into “Ehe für alle” in October 2017. The German context is particularly interest-

ing because, on the one hand, family policies enhance more extensive labor market participation by mothers. On the other hand, the tax system rewards couples with a clear breadwinner.

2.3 Theoretical background

Numerous theories have been proposed to explain the division of labor in couples. This section discusses theories based on economic frameworks, as well as theories based on gender normative and cultural frameworks. The primary goal is to identify the reasons for the differences in the division of labor between female same-sex and different-sex couples.

2.3.1 Economic explanations of the division of labor in couples

Economic models of household specialization argue that the partner with a comparative advantage in paid or unpaid work invests in that sphere (Hadfield, 1999). For different-sex couples, it is the “male chauvinist interpretation” assuming that women will specialize in domestic labor because of their biological ability to bear children (for a critical discussion see, e.g., Bergmann, 1995; Hadfield, 1999). Due to the absence of any clear biological advantage in same-sex couples, the economic model predicts that they will specialize less in paid and unpaid work, as they do not benefit from specialization to the same extent as different-sex couples (Badgett, 1995; Giddings, 2003).

The *bargaining perspective* incorporates the idea of power dynamics and different preferences within the couple (Blood and Wolfe, 1960; England and Budig, 1998; Lundberg and Pollak, 1996). The division of labor within the couple results from the discrepancy in the partners’ resources. According to their preferences, partners with higher relative resources bargain themselves out of the tasks they prefer less. Partners rely on different resources, such as education and labor market income,

but also love or commitment to the relationship (Lundberg and Pollak, 1996). The relative resource theory is gender-neutral per se, which does not explain *why* female same-sex and different-sex couples differ in their distribution of work. It could be due to differences in preferences or relative resources or how they use their bargaining power.

Another explanation for why same-sex and different-sex couples differ is the former's lack of access *legal and social institutions* (Badgett, 1995, p.131). Badgett (1995) emphasizes that as same-sex couples do not have (had) access to legal marriage, they face higher levels of insecurities in their relationship regarding pooling assets. They did not benefit from tax policies or benefits from joint health insurance. Depending on context and time, same-sex couples are still disadvantaged in terms of adoption rights or recognition of parental status. Although critically discussing the wish for legal recognition of same-sex marriage, on the one hand, or the abolition of marriage as a hetero normative script, on the other, Badgett (1995) argues that differences in the access to legal and social rights are essential factors in explaining the lower level of specialization in same-sex couples. Even though the constraints on legal rights have recently been lifted, the legacy of unequal treatment might still be at play. Attached to legal regulations are normative expectations, which are more opposed to rapid change.

2.3.2 Cultural explanations of the division of labor in couples

Also cultural perspectives offer explanations why female same-sex and different-sex couples diverge in their division of labor. The so-called “egalitarian ethic” idea suggests that same-sex couples follow more egalitarian norms than different-sex couples and, thus, divide paid and unpaid work more equally. However, this statement has often been criticized for implying that the division of labor in same-sex couples is “empty of gendering processes and practices” contrary to the “gender-full” labor division in different-sex couples (Oerton, 1997; Goldberg, 2013, p.421).

Theories incorporating the cultural context and emphasizing the role of socialization as a stage in life where gender roles are transported and reinforced gained prominence for explaining the division of labor in same-sex and different-sex couples. According to the *doing gender theory* (West and Zimmerman, 1987), men and women demonstrate to themselves and others that they are competent members of their gender category by performing tasks appropriate for their gender role. Typically, domestic and care tasks such as childcare are ascribed to women, whereas paid work and the role of the breadwinner are attributed to men (Brines, 1993). Gendered norms shape the division of labor in different-sex couples. Empirical studies show that even if women are the main breadwinners, they do more housework and childcare than their male partners, which supports the explanation derived from societal gender roles (Bittman et al., 2003; Evertsson and Neramo, 2004). Those gender roles are taught during socialization to all girls and boys regardless of their sexual orientation (Bjarnason and Hjalmsdottir, 2008) or the sexual orientation of their parents (Fulcher et al., 2008). Same-sex couples are affected by those gender roles too. Since partners in same-sex couples share socially prescribed gender roles, they likely distribute work equally simply as a result of the sex composition in the household. Due to socialization, the preferences for working hours will be alike and thus result in a more equal division of paid labor than different-sex couples. Still, research provides evidence that gendered practices are also present in same-sex couples, with lesbian women tending to overreport and gay men underreporting their time spent in housework (Carrington, 1999). It is also more common for male same-sex couples for both partners to work full-time and for female same-sex couples to work part-time (Jaspers and Verbakel, 2013; van der Vleuten et al., 2021).

The way parents behave is influenced by their country's legal and institutional framework, as well as cultural factors (Hook, 2010; Pfau-Effinger, 2005). Pfau-Effinger (2005) highlights the importance of the gender culture on how parents react to family policies. For example, despite the implementation of identical family policies in Germany since reunification, there are considerable East-West differences

in the employment patterns of mothers and the division of labor within families. Therefore, Germany provides an ideal case to observe the effectiveness of two normative contexts within one legal framework. Despite indications of convergence of the regions, West Germany has higher support for a traditional breadwinner constellation, while attitudes towards working mothers and childcare for young children are more widespread in East Germany (Buschner et al., 2018; Kreyenfeld and Geisler, 2006; Pfau-Effinger and Smidt, 2011; Rosenfeld et al., 2004; Wenzel, 2010). Considering regional differences in gender culture, I expect differences in the division of paid labor between same-sex and different-sex couples to be smaller in East Germany than in West Germany.

2.4 Research on the division of labor in same-sex couples with children

Previous research shows that mothers in same-sex couples divide paid and unpaid work more equally than mothers and fathers in different-sex couples (Aldén et al., 2015; Bauer, 2016; Fulcher et al., 2008; Goldberg and Perry-Jenkins, 2007; Jaspers and Verbakel, 2013). Only few studies examine the division of *paid* work. For example, Jaspers and Verbakel (2013) show that female and male same-sex couples divide paid work more equally compared to different-sex couples. Comparing male and female same-sex couples, van der Vleuten et al. (2021) demonstrate that female same-sex couples spend less time in paid work than male same-sex couples, but both divide paid work equally. Also, Jepsen and Jepsen (2015) find that female same-sex couples have smaller differences in working hours than different-sex couples.

Focusing on income gaps within couples, several studies find consistently lower income gaps in female same-sex couple compared to different-sex couples (Antecol and Steinberger, 2013; Andresen and Nix, 2022; Jepsen and Jepsen, 2015; Moberg, 2016).

In line with cultural theories, Patterson et al. (2004) find that among female same-sex couples, egalitarian attitudes were stronger predictors for the division of unpaid work. However, structural variables such as the male partners' paid working hours were better predictors for the division in different-sex couples (Patterson et al., 2004). Comparing heterosexual and homosexual adoptive families, Farr and Patterson (2013) confirm that homosexual couples share care work equally, but heterosexual couples follow a specialized division of childcare. These results indicate the importance of gender or the gender composition of couples as factor for an egalitarian division of labor. When examining parental leave uptake in Sweden, Evertsson and Boye (2018) show that in female same-sex couples, the birth mother takes more parental leave than the social mother, but the social mother in same-sex couples takes longer leaves than fathers in different-sex couples. Similarly, interviewing female same-sex couples with children, Patterson (1995) found that biological mothers are more involved in childcare, while non-biological mothers spend more time in gainful employment.

Research on the distribution of relative resources in same-sex couples and how it affects the division of labor is inconclusive. Some studies suggest that same-sex couples are more similar in terms of occupational prestige and income levels (Moberg, 2016; Patterson et al., 2004), while others show that they are less similar in education and age than different-sex couples (Lengerer and Schroedter, 2022; Jaspers and Verbakel, 2013; Schwartz and Graf, 2009). Regarding the predictive power of relative resources, Solomon et al. (2005) find that being in a same-sex union is a stronger predictor of an equal division of labor than similar income levels. A study by Orefice (2011) contends this finding by showing that shifts in bargaining power also affect the division of household labor in same-sex couples. Empirical findings for bargaining theories are mixed and do not fully explain the division of labor in same-sex couples.

Based on the assumption that the division of labor within households is largely driven by institutional arrangements and constraints, Giddings et al. (2014) exam-

ine the specialization gap between same-sex and different-sex couples showing that younger cohorts have a smaller specialization gap which can be potentially attributed to changes in institutional constraints.

2.5 Hypotheses

The economic theory emphasizing specialization, as well as the gender theory, argue that the absence of the male-female juxtaposition is associated with higher levels of equity in the division of labor in same-sex than in different-sex couples. Following the idea of equity norms, researchers expect that same-sex couples specialize less than different-sex couples due to their “egalitarian ethic”. Despite varying proposed mechanisms, the vast majority of the theoretical concepts lead to the hypothesis that *same-sex couples divide paid work more equally than different-sex couples* (H1).

The relative resource or bargaining perspective does not clearly predict how and why different-sex and same-sex couples vary in their division of labor. One option for why same-sex couples divide paid work more equally would be that they are more similar in their preferences and/or resources. As described in the previous section, how relative resources are distributed within same-sex couples differs depending on the resource and country context. Even if same-sex couples are more heterogamous in their relative resources, they still divide paid work more equally than different-sex couples (Jaspers and Verbakel, 2013). I thus control for relative resources in couples and hypothesize that *same-sex couples divide paid work more equally than different-sex couples even after controlling for relative resources of the partners* (H2)

An explanation of why same-sex and different-sex couples vary in their division of labor is the gender culture in the respective context. I make use of considerable East-West differences as a way to test the associations between gender culture and the division of labor. In East Germany, the support for maternal employment and public childcare for young children is higher than in West Germany. Thus I hypothesize that *the difference in the division of paid work between same-sex and different-sex couples is smaller in East than in West Germany* (H3).

2.6 Data and methods

2.6.1 Data

Because the share of same-sex couples, especially those with children in the household, is relatively low, a large sample size is needed to obtain representative outcomes. Further, as this study wants to examine the division of labor in couples, reports of both partners are required. The German Microcensus is a household survey annually collecting information from 1% of the German population suitable for this investigation. I analyze data from the Scientific Use Files, which are de facto anonymized, and comprise 70% sub-samples of the original data. Since respondents are legally obliged to participate in the Microcensus, the unit nonresponse is very low (<3%). Combining waves from 2010 to 2019 Microcensus data offers a unique opportunity to study the division of paid labor in female same-sex and different-sex couples.

Identifying same-sex couples (SSC) and different-sex couples (DSC) living together in the same household is a multi-step process. The first way to identify them is through marital status, which covers marriages and registered civil partnerships. As marriages are also available for same-sex couples since 2017, the sex of the partner is a key variable to identify whether both partners have the same sex or not. If the household members are not in a legally formalized union, they are asked about the partner in the household. As the question's wording is neutral, only with the combination with the sex of the partner is the identification of same-sex and different-sex couples possible. The question about the partner in the household is voluntary, resulting in an item nonresponse of around 4%, which is most likely selective with respondents potentially co-residing with a same-sex partner being inclined not to answer the questions than those cohabiting with a different-sex partner (Lengerer and Schroedter, 2022). I follow the Microcensus team's recommendation

and impute the missing data using the information on the household composition and age differences within the household.¹

The sample was restricted to couples with at least one child under 18 in the household. The age of the respondents is limited from 20 to 55 years, covering the prime working and fertility age. Lastly, families with complex structures, such as co-residing grandparents or other members, are excluded as it could influence the division of labor in the household. The final sample consists of 920 women in same-sex relationships (460 couples), 363,192 women, and men in different-sex couples (amounting to 363,192 different-sex couples).

2.6.2 Analytical strategy

The main focus of this analysis is the division of paid labor in female same-sex and different-sex couples. In the descriptive analysis, results for the weekly working hours of the partners, the division of paid work, and the sample characteristics are presented. The pooled multiple regression analysis consists of three parts. First, I examine the paid working hours of mothers as the dependent variable, controlling for the household composition and educational attainment of mothers. Second, regressions are presented for the division of paid work as a dependent variable. The models are estimated stepwise, with the first model only including the sex of the partner as an independent variable. The following model additionally includes the independent and control variables. Third, an interaction term for regional differences by the sex of the partner is added. Results are presented as average working hours ratios. To inspect variances between female same-sex and different-sex models, I additionally run all models separately for same-sex and different-sex couples (see Appendix B, Table B.6 for mothers working hours and Table B.7 for the division of labor in couples).

¹Relying on the sex of the partner for identification of same-sex and different-sex couples is subject to falsely identifying same-sex or different-sex couples and thus reduces the differences between the groups and leaves me with a more conservative estimate of the effects. As the number of same-sex couples is relatively low in international comparison, the miscoding of the sex of the partners in the Microcensus seems to be the case (for a detailed description and discussion see: Lengerer, 2022).

2.6.3 Measurements

The *weekly working hours* are measured by the question of “how many hours did you actually work last week”. The weekly working hours were capped at 60 hours. The *working hours ratio* was calculated by dividing the couple’s lowest number of working hours by the highest number. Couples with perfect equity in their paid working hours have a ratio of 1, while a ratio of 0 indicates a couple with one partner working and an inactive or unemployed counterpart. Note that in different-sex couples, it could also be the male partner that works less than the female partner, which is the case for just 8% of the different-sex couples. The working hours ratio measures the specialization within the couple and does not necessarily include the gendered division in different-sex couples. I exclude couples in which both partners are inactive (around 3%).

The sex of the partner identifies if the couple is a female same-sex or a different-sex couple. A categorical variable indicates the number of children present in the household by differentiating between one child, two children, and three or more children. Unfortunately, it is impossible to identify the child’s biological parent(s) in the Microcensus. The age of the youngest child is operationalized with a categorical variable with the age brackets: 0-2 years, 3-5 years, 6-11 years, and 12-17 years. The level of education is measured based on the CASMIN scheme and summarized as low, medium, or high education. On the couple level, I distinguish between homogamous couples with the same education level, and heterogamous couples with different educational levels. Differences in educational levels are used as a measure for the distribution of the relative resources in the household: Couples with a similar level of bargaining power are expected to divide paid work more equally compared to couples with an unequal distribution of educational levels.

To capture regional differences, a dummy variable indicates whether the couple is living in East Germany (including Berlin) at the time of the survey. The regression on mothers’ working hours controls for women’s age. The analysis for the division of paid labor contains the couples’ mean age and the absolute difference in the age of the

partners as controls. Further, I control for marital status by differentiating between cohabiting and married couples, while registered same-sex couples are categorized as married. Migration background is included in the analysis and distinguishes between individuals whose parents were born in Germany, those who migrated themselves, or those who have a parent born outside of Germany. In the analysis of the division of paid labor, I differentiate between couples with both partners having no migration background, one partner with a migration background, and both partners with a migration background. The year of the survey is entered as a continuous variable.

For the description of the sample, I include the employment status and the employment constellation of the couple. The employment status of the partners separately differentiates between “standard employment”, which includes permanent full-time employment. “Atypical employment” describes part-time, marginal, or employment with a limited work contract. Further, I differentiate between “self-employment”, “unemployment”, and “inactivity”, which includes individuals that are not actively looking for employment. Further, I provide summary statistics of the couples’ employment constellation. In “one-earner” couples, one partner works full-time, while the other partner reports zero working hours. Full-time employment is defined as 35 hours or more per week. The “one-and-a-half” model describes couples with one full-time working partner and the other partner working part-time. Part-time employment consists of 1 to 34 weekly working hours. The other categories are “dual full-time”, “dual part-time”, and “dual non-employed”.

2.7 Results

2.7.1 Descriptive results

Table 2.1 provides descriptive information at the individual level for women in same-sex and men and women in different-sex couples. The average working hours of men resemble full-time employment (35 hours), while their female counterparts have the lowest average working hours at 15 hours. On average, women in same-sex

couples work more (25 hours) than women in different-sex couples and less than men. Women in same-sex couples have, on average, a higher level of education and are slightly younger than women in different-sex couples (37 years versus 39 years). Men are, on average, 41 years old. The gendered division of labor in different-sex couples is apparent when comparing employment status: Men are mainly employed full-time with a permanent contract (74%), while women are either in atypical employment (32%) or inactive (23%). On the other hand, women in same-sex couples are more often full-time employed (63%) than women in different-sex couples.

Table 2.1: Descriptive information on **individuals** in female same-sex and different-sex couples with children in the household

	Women in SSC	Women in DSC	Men in DSC
	mean (st. dev)		
Actual working hours	25 (18)	15 (15)	35 (17)
Age	37 (7)	39 (7)	41 (7)
	column %		
Level of education			
Low	17	24	30
Medium	50	55	45
High	33	21	26
Migration status			
No migration background	89	73	74
Migration background	11	27	26
Employment status			
Standard employment	63	36	74
Atypical employment	16	32	8
Self-employment	7	5	12
Unemployment	6	3	3
Inactivity	8	23	3
N(persons)	920	363,192	363,192

Source: Microcensus 2010-2019, own calculations.

Table 2.2 presents the summary of couple characteristics. Equality in the division of paid labor, as measured by the working-time ratio, is higher for same-sex couples than for different-sex couples. On average, the working hours ratio is 0.55 for same-sex couples and 0.42 for different-sex couples. Consistent with Lengerer and Schroedter (2022), same-sex couples have higher age differences of 5 years compared to different-sex couples with a difference of 4 years. Different-sex couples are

Table 2.2: Descriptive information on in female same-sex and different-sex couples with children in the household

	Female same-sex couples	Different-sex couples
	mean (st. dev.)	mean (st. dev.)
Working hours ratio	0.55 (0.41)	0.42 (0.38)
Couples' mean age	37 (6)	40 (7)
Absolute age difference	5 (4)	4 (3)
	column %	
Marital status		
Cohabiting	42	13
Married/civil union	58	87
Number of children		
1 child	61	37
2 children	29	46
3+ children	10	17
Age youngest child		
0-2 years	34	27
3-5 years	15	19
6-11 years	27	29
12-17 years	24	26
Educational homogamy		
Homogamous	62	62
Heterogamous	38	38
Region		
West Germany	73	83
East Germany	27	17
Migration background		
No migration background	84	67
One partner migration background	11	11
Both partners migration background	5	22
Employment constellation		
One earner	12	23
One-and-a-half	45	51
Dual full-time	30	20
Dual part-time	8	3
Dual non-employed	6	4
N(couples)	460	363,652

Source: Microcensus 2010-2019, own calculations.

more often married (87%) than same-sex couples (58%) and have more than one child (61%) than same-sex couples (37%). The age distribution of the youngest child in the household is similar for same-sex and different-sex couples, with most couples having a child aged 0-2 years (34% and 27%). Also, regarding educational homogamy, the analytical sample of same-sex and different-sex is similar, with 62% of both partners having the same level of education. The share of homogamous female same-sex couples is higher than in the analysis of Lengerer and Schroedter (2022), which might be due to different sample compositions and a smaller and more recent time frame, as they also show that the educational differences in same-sex couples decreased over time.

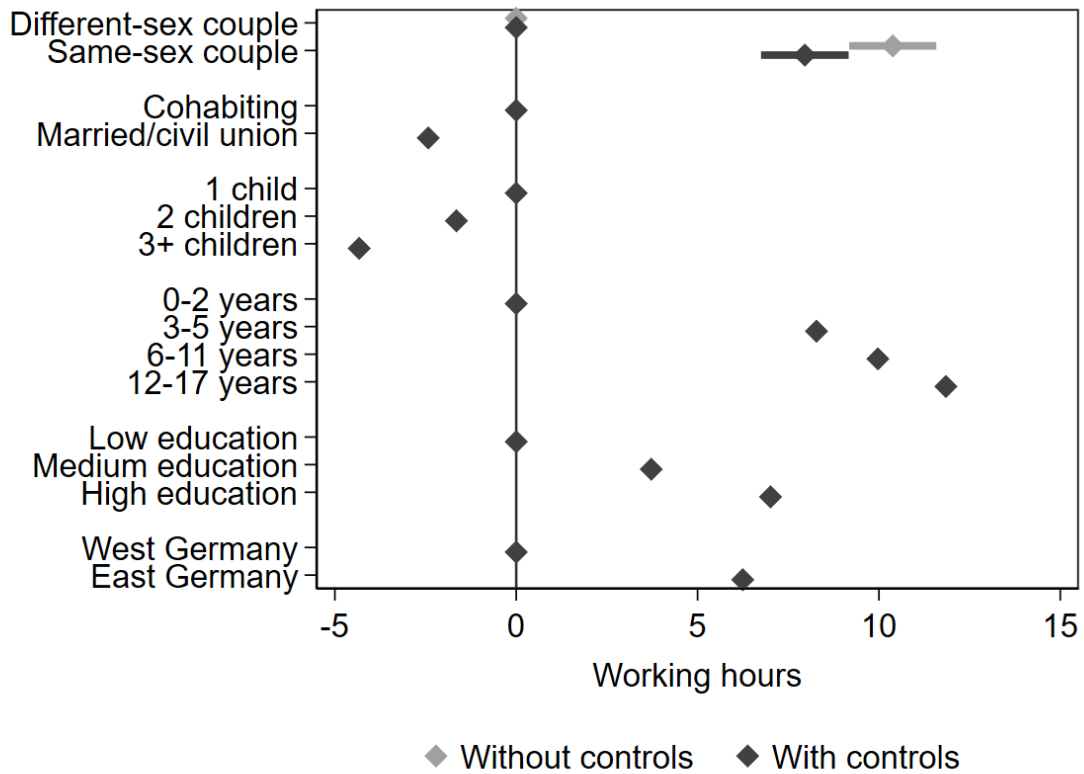
Employment patterns differ between same-sex and different-sex couples. Different-sex couples are more likely to have one earner (23%) and a one-and-a-half-earner model (51%), while same-sex couples are more likely to have both partners employed full-time (30%) or a dual part-time-earner model (8%). Dual non-employment is more common among same-sex couples (6%) than for different-sex couples (4%). Female same-sex couples live more often in East Germany than different-sex couples, mainly driven by same-sex couples living in Berlin. This is in line with previous findings that gay or bisexual individuals more often live in cities or are sometimes referred to as ‘gay capitals’ (Kroh et al., 2017).

2.7.2 Multiple regression results

As a first step, results of the individual level pooled multiple regression analysis are presented, where the sample consists of women living with their partners and having at least one child under 18 in the household. Figure 2.1 displays the *beta*-coefficients obtained from linear regressions of the mothers’ working hours. Being in a same-sex relationship is positively associated with higher working hours.

Being married is negatively related to lower weekly working hours. Also, the number of children is negatively associated with women’s working hours in couple households. When the youngest child is older, mothers work more hours. Women

Figure 2.1: *Beta*-coefficients from OLS models with **mothers working hours** as dependent variable



Source: Microcensus 2010-2019.

Note: Regressions with independent variables further control for women's age, year, and migration background.

with a medium or high level of education work more hours than women with a low level of education. To test how relative resources are associated with mothers' working hours, we use the educational differences in the couple as an independent variable. The findings, presented in Figure B.1 and Table B.4 in the Appendix B, demonstrate that mothers with a higher educational degree than their partners work more hours and mothers with a lower educational degree than their partners work less than mothers with the same educational degree than their partners. Residing in East Germany is also associated with higher weekly working hours for mothers, supporting previous findings on mothers' higher labor market participation in East Germany (Barth et al., 2020).

Figure 2.2: *Beta*-coefficients from OLS models with **couples working hours ratio** as dependent variable



Source: Microcensus 2010-2019.

Note: Regressions with independent variables further control for couples' mean age and age differences, migration background, and year.

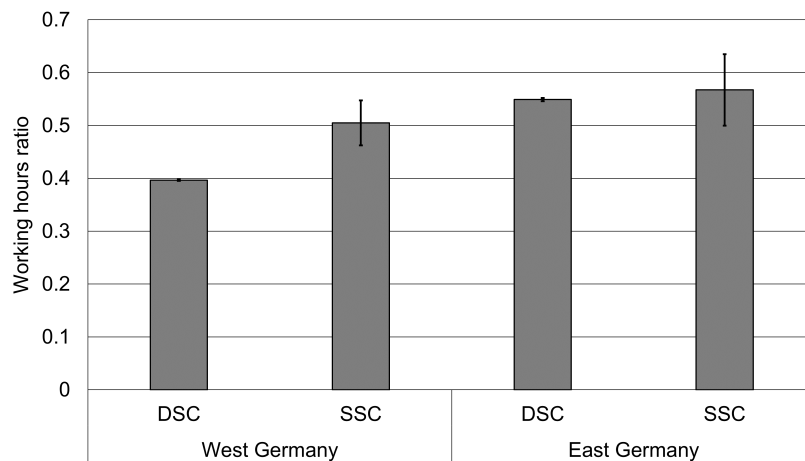
Figure 2.2 shows the results of the working hours ratio as the dependent variable, where the sample consists of couples with children in the household. The dependent variable working hours ratio is constructed so that a ratio of 1 represents perfect equality, and a ratio of 0 represents maximum specialization. The higher the working hours ratio, the more equal the division of paid work within the couple.² Figure 2.2 supports the first hypothesis that female same-sex couples have a more equal division of paid work than different-sex couples. The second hypothesis stated that female same-sex couples divide paid work more equally than different-sex couples, even after controlling for the distribution of the relative resources in the couple. When control variables are added to the model, the coefficient of being in a same-sex couple is

²The full regression results can be found in Table B.5 in the Appendix B.

smaller than in the baseline model, however, female same-sex couples still exhibit a more equal division of paid work, which is in line with the second hypothesis (H2).

Results confirm that married couples divide paid work less equally than cohabiting couples, mirroring the German welfare state incentive structure to specialize within the couples through various policies, such as income taxation splitting. In line with previous research (Beaujot and Liu, 2005; Frenette, 2011), couples with more children in the household follow a more unequal division of paid work than couples with one child. Also, couples with young children have a lower working hours ratio, indicating a lower degree of equality in the division of labor, probably due to the increased need for intensive care. Educational differences within couples are also associated with a less equal labor division. When partners diverge in their educational level, they follow a less equal division of labor than homogamous couples. This finding is in line with the relative resource or bargaining theory. Further, couples residing in East Germany at the time of the interview divided paid work more equally.

Figure 2.3: Average predicted working hours ratio: Interaction region and sex of partner



Source: Microcensus 2010-2019.

Note: All regressions further control for couples' mean age and age differences, year, age of the youngest child, number of children, migration background, and marital status.

Higher coverage of public childcare facilities and a legacy of working mother norms are often argued to be causing more equal working hours among different-sex couples in East Germany Buschner et al. (2018), which I account for by interacting

place of residency with the sex of respective partners. The results are displayed as predicted working hours ratios in Figure 2.3. Different-sex couples residing in West Germany show the lowest predicted working hours ratio with 0.40, while the predicted working hours ratio is 0.50 for their same-sex counterparts. The difference in the degree of specialization becomes marginal when comparing same-sex and different-sex couples residing in East Germany (0.57 and 0.55), supporting the hypothesis (H3). This finding can be taken as an indication of the role of context as a moderator for how sex composition in couples is associated with the division of paid work.

2.8 Discussion

This study examined the division of paid work in same-sex and different-sex couples with children in the household. The data source for this project is the German Microcensus from 2010-2019, which provides the unique opportunity to study female same-sex couples with children in the household. To enhance comprehension of the division of paid labor, I initially presented evidence on the weekly working hours of mothers on an individual level. The findings from the multiple regression analysis validate that mothers in same-sex couples work more hours compared to mothers in different-sex couples.

Examining the division of paid work in couples with children in the household, findings reveal that female same-sex couples divide paid work more equally than different-sex couples. Even after adding control variables, the difference between same-sex and different-sex couples in the division of paid labor remained, indicating that same-sex couples have stronger equity norms or a lower degree of gender polarization regarding gender roles. The control variables followed established patterns: Couples with more children followed a more specialized division of labor than couples with one child at home. Couples with older children divide paid work more equally than couples with young children, indicating that the need for intensive childcare is higher when the child is young. In line with bargaining theories, educational

differences were associated with more specialization. Exploring regional differences, results show that couples residing in East Germany, despite the sex of the partner, had a similar degree of specialization. In contrast, same-sex and different-sex couples diverged more in West Germany. This finding highlights the importance of the cultural context. Confirming previous findings, this study showed that same-sex and different-sex couples vary in their division of labor. These differences can partly be attributed to differences in the composition of the couples, but some parts remain unexplained, hinting towards cultural factors driving the different behavior. Even though same-sex couples were socialized in their sex role, the absence of role polarization within the couple makes it challenging to assign paid and unpaid work according to traditional gender roles. Therefore, same-sex couples need to find other ways to distribute labor within the couple.

This study has several limitations. Unfortunately, it is impossible to identify biological or stepparents or, in the case of same-sex couples, to determine whether the child was adopted or born within the partnership and, if so, to identify the birth mother. In particular, identifying the birth mother would have been interesting as it also affects maternity leave. Studies have shown that even in same-sex couples, birth mothers take more parental leave and invests slightly more in childcare than non-biological mothers (Evertsson and Boye, 2018; Patterson, 1995). Additionally, the sexual orientation of partners remains unclear as respondents were not asked about their self-identification. Therefore, the question remains whether it is the sexual orientation or the sex composition within the couple that is associated with a more or less equal division of labor. Due to a small sample size of male same-sex couples with children in the household, we could not include them in the analysis. Particularly regarding the gender role theory (West and Zimmerman, 1987), it would also be promising to investigate male same-sex couples with children to examine how they are doing gender.

Besides these limitations, this study contributes by examining the division of paid labor in households with children in Germany. Examining the distribution of paid

working hours among couples has the advantage of being less prone to reporting errors, as opposed to measures of the division of childcare or housework. When partners are asked to report the division of unpaid labor, reports differ depending on who is asked (Kamo, 2000). In contrast, the evaluation of time spent in the labor market is affected less and gives us a more precise measure of specialization within couples (Bonke, 2005). Further, studies from different country contexts mostly rely on earnings as a measure of the division of labor when comparing different-sex and same-sex couples, assuming that this is translatable to working hours.

Reflecting on the country context, it is particularly remarkable to find such pronounced differences in the division of labor between same-sex and different-sex couples. Regarding the division of labor, the German welfare state sends mixed signals. On the one hand, the joint taxation of spouses creates incentives to specialize, but the parental leave reform also encourages men to participate in childcare. It seems that different-sex couples either benefit more from specialization than same-sex couples or are more reluctant to react to the more recent changes in the welfare state. The division of labor of different-sex and same-sex couples in Germany is similar to the one in the Netherlands (Jaspers and Verbakel, 2013). Applying a cross-sectional perspective, van der Vleuten et al. (2021) suggest that the gender culture in a country might be important for couples on how to divide housework but remains unclear in how it affects paid work. The results of our study and previous research underline the importance of disentangling the mechanisms that drive couples' decisions on how to divide work. This study further emphasizes the necessity of assessing how welfare states shape the division of labor as a function of the sex composition of the couple.

When examining the division of paid work in same-sex couples, it is important to consider the legal and cultural constraints that these couples face. The lack of institutionalization of same-sex unions can make the risk of specialization too great, leading to differences in the division of labor between same-sex and different-sex couples (Badgett, 1995; Giddings, 2003). In addition, differential treatment of

female same-sex couples in terms of cost coverage for insemination or IVF treatments may result in a selective group of same-sex couples with children who can afford such treatments. This could explain the higher share of highly educated women among same-sex couples, as high education is often associated with higher earnings. Future research should evaluate the impact of structural and legal changes on the family lives of same-sex couples to gain a better understanding of how external factors relate to internal family processes.

3

The division of childcare during the coronavirus crisis in Germany: How did short-time work affect fathers' engagement?

Abstract

OBJECTIVE

This paper examines how participation in the short-time work scheme affected the gendered division of childcare during the COVID-19 crisis in Germany.

BACKGROUND

Short-time work (Kurzarbeit) has been one of the main policies used to combat the economic and labor market repercussions of the coronavirus pandemic in Germany. We examine whether and, if so, how the growing prevalence of short-time work has affected care patterns.

METHOD

We use data from the IAB-HOPP, a longitudinal study monitored by the German Institute for Employment Research (IAB). The analytical sample includes couples with children aged 12 and younger. We employ multinomial logistic regressions in which the outcome variable is the change in the division of care work from a period before to a period during the coronavirus crisis (June to October 2020).

RESULTS

We find that among men, receiving short-time work benefits resulted in more gender-equal care patterns. The positive effect of short-time work on the division of childcare is moderated by the level of education. Fathers with low or medium education are more likely to increase their childcare share when receiving short-time work benefits compared to fathers with high education. However, we also find that participating in the short-time work program had no strong or significant effects on the gendered division of care among women.

CONCLUSION

The evidence from this study suggests that men's working time is a major vehicle to change the gendered division of care in couple households.

3.1 Introduction

Family life has been affected by the coronavirus crisis in multiple ways. There is consistent empirical evidence that satisfaction with family life declined sharply during the (first) lockdown in Germany (Hübener et al., 2021), with lone-parent families, families with children of kindergarten age, and families with children with special needs reporting the largest declines in well-being (Hübener et al., 2021; Möhring et al., 2021b; Langenkamp et al., 2022). It has also been observed that parents’ “mental load” increased substantially during the pandemic due to mounting worries about how to organize childcare and home-schooling (Czymara et al., 2021). Moreover, the pandemic has led to increases in depression and decreases in mental well-being among children and young people, particularly among those who were experiencing critical life course transitions during the pandemic (Andresen et al., 2020; Ravens-Sieberer et al., 2021).

While there is every reason to believe that the pandemic has posed serious challenges for families and children, scholars have also pointed out that the crisis has resulted in some positive changes. For example, the pandemic may have triggered a long overdue digital transformation of the German labor market. In particular, it has promoted the adoption of “remote work”, which can make it easier for parents to combine work and family life (Nagel, 2020). Furthermore, fathers have been spending more time with their children during the pandemic than they did before (Bujard et al., 2020; Kreyenfeld and Zinn, 2021; Margaria, 2021). Clearly, this additional family time was the result of closures of schools and day care centres. Thus, for many parents, this additional time spent with children may have felt more like a “care burden” than “quality time”, particularly if it was the result of a job loss, or if parents had to combine childcare with working remotely. However, in Germany, job losses were much rarer in the early phase of the pandemic than they were in other countries (such as the US). One of the main labor market policy instruments the German government uses to discourage employers from laying off large numbers of employees in times of crisis is the “short-time work” program (Kurzarbeit). In April

2020, 18% of all employees were in short-time work, with men (19%) being more likely than women (17%) to participate in the program (Konle-Seidl, 2020). These gender discrepancies in participation increased further in the subsequent months (see Figure 3.1). There is also evidence that parents were more likely than childless individuals to be in short-time work (Möhring et al., 2021c). When employees participate in the short-time work program, their working hours are reduced, while the government subsidizes their forgone wages. Thus, short-time work operates in the same way as paid leave. As being placed on short-time work suddenly affected people’s work hours and their time budgets, the sharp rise in the number of workers participating in the program can be regarded as an “exogenous shock”. As such, it can be viewed as a “natural experiment” that can be studied to determine the causal impact of paid leave on paternal behavior.

In this paper, we examine the relationship between participation in the short-time work scheme and parental engagement in childcare. More specifically, we examine the question of whether fathers’ childcare contributions increased during the pandemic as a result of their participation in the short-time work program. Thus, our analysis adds to the growing body of research on the impact of the coronavirus crisis on gendered care patterns (e.g., Hank and Steinbach, 2021; Kohlrausch and Zucco, 2020; Kreyenfeld and Zinn, 2021). It also provides insights into the scope of paternal involvement in a welfare state that has recently intensified its efforts to increase maternal employment rates, and to promote a more equal division of labor. The data for this analysis came from IAB-HOPP, which is an internet survey panel monitored by the Institute for Employment Research (IAB). The sample was randomly drawn from the German employment registers. For this investigation, we used data gathered between June 2020 (wave 2) and October 2020 (wave 5). The data include prospective measures on the division of care work for wave 2 to wave 5 and retrospective measures for the period before the coronavirus pandemic that were collected in wave 2 of the survey. Using these data, we were able to distinguish between couples based on whether the gendered division of care in their household

had become more equal, had become less equal, or had remained the same over the course of the coronavirus pandemic. Thus, the data allowed us to investigate how care patterns have changed during the coronavirus crisis, and whether these changes can be attributed to the growing prevalence of short-time work among fathers.

The remainder of our paper proceeds as follows. In Section 3.2, we provide relevant background information on the German institutional context, and a summary of prior research. In Section 3.3, we formulate our argument regarding the interplay of fathers' participation in the short-time work scheme and the division of care in couples, while drawing on theories regarding the division of labor. In Section 3.4, we present the data and the analytical sample. In Section 3.5, we provide a descriptive overview of the gendered division of childcare before and during the coronavirus crisis, and analyze the changes in the gendered division of care based on IAB-HOPP data. Furthermore, we employ multinomial logistic regressions to determine whether couples changed their care patterns between the period before the coronavirus pandemic and June to October 2020. Additionally, we examine how educational status moderated the effect of fathers' employment status on the division of care. While the focus of the analysis is on how fathers' participation in the short-time work program affected the division of labor in the household, we briefly present results for mothers (see Appendix C). In Section 3.6, we discuss the results within the broader societal context, and consider how contemporary societies can encourage couples to organize childcare more equally.

3.2 Institutional context and prior findings

3.2.1 Family policies and gendered work and care patterns

Germany has regularly been classified as the ideal type of a conservative and familistic welfare state regime in which the family is regarded as the main provider of care (Esping-Andersen, 1990). As a result of the gendered division of care, the majority of women in post-World War II West Germany did not participate fully

in the labor market. The legacy of this traditional male breadwinner system is still apparent in Germany's income-splitting taxation system, as well as in the country's public health insurance system, which allows for the co-insurance of the non-working spouse. This history also explains the low employment rates of married women and the gendered division of labor that has characterized (West) German society for decades.

More recently, Germany has launched major family policy reforms. Since 2005, childcare for children under the age of three has been expanded. In 2007, an earnings-related parental leave system was introduced. Since the implementation of this reform, parents have been eligible to receive 67% of their previous income (65% since 2011) for the first 12 months of parental leave. In addition, the so-called "daddy months" were introduced to incentivize fathers to take parental leave (Bünning, 2020). Scholars have argued that these recent family policy reforms have led to a fundamental shift in Germany away from the country's conservative and familialistic heritage (Fleckenstein, 2011). Thus, Germany is gradually moving towards becoming a "dual-earner dual-carer society". While this diagnosis may be premature, an evaluation of the abovementioned family policy reforms has indeed shown that the expansion of childcare has led to significant increases in maternal full-time employment rates (Geyer et al., 2015).

Childcare patterns among fathers in Germany have also changed significantly in recent years. Following the implementation of the new parental leave system, the proportion of fathers who take parental leave has increased sharply. While fathers still tend to take much shorter leave periods than mothers, around 40% of all fathers use at least some of their parental leave benefits (Statistisches Bundesamt, 2023c). Furthermore, gendered care patterns have shifted in recent years, with fathers today performing more childcare chores than their counterparts did in prior decades. For example, Samtleben et al. (2020) found that men in couple households were performing 30% of childcare tasks in 2017, up from just 20% in the 1990s. It is, however, important to note that there are pronounced East-West differences in

family behavior. While part-time employment rates have been increasing among women in East Germany, mothers in the East are much more likely than mothers in the West to be in full-time employment (Trappe et al., 2015). For example, in 2018, 48% of mothers (with children under age 18) in East Germany were working part-time, compared to 71% of mothers in West Germany (Statistisches Bundesamt, 2023). There is also evidence that the gendered division of care in couple households is more equal in the East than in the West (Trappe, 2010).

The coronavirus pandemic hit Germany at a time when the country's families had been undergoing significant changes. The families that were most affected by the closure of schools and daycare centers were those with children aged 12 and under. These were families who had their children after the expansion of childcare and the introduction of the parental leave system. On the one hand, it could be assumed that for this new generation of parents, having been exposed to these family policies led to fundamental changes in their gender role attitudes that guided their care patterns. Furthermore, it may be assumed that these families have become more aware that a single-earner model is a risky arrangement given the high divorce and separation rates in Germany. In addition, the experience of the global financial crisis of 2007/08 may have sharpened the awareness of couples that both partners have to be integrated into the labor to secure the well-being of the family. On the other hand, it could be argued that these changes have been relatively recent, and that the changes in family life during the pandemic might have led to a backlash that nullified the progress towards gender equality that has been made in recent years. In Germany, women's earnings have not yet reached parity yet with men's earnings. Thus, a crisis of this kind may have strengthened the position of the main provider in the household, while weakening the position of the "second earner". This dynamic may be especially likely occur in households in which the woman has been in part-time or marginal employment, as is often the case in West German families. Thus, the pandemic may have led to a "re-traditionalisation" of gender role behavior (Allmendinger, 2020).

3.2.2 Prior research on the division of care during the COVID-19 pandemic

Prior research on the “coronavirus-related” changes in the division of work has mostly refuted the abovementioned “re-traditionalisation hypothesis” in the German context.¹ Based on longitudinal data from the German Family Panel (pairfam), Hank and Steinbach 2021 compared parents’ reports in 2019 with their reports in March 2020, and found that the division of care remained largely unchanged over this time period. Kreyenfeld and Zinn (2021) corroborated these findings using data from the German Socio-Economic Panel (GSOEP). The latter study drew on data from 2019 that were linked to data collected during the first lockdown (March to May 2020). As expected, the results indicated that parents spent more time with their children during the lockdown than they did before, but the absolute increases were similar for both mothers and fathers.

In addition, the results of a study based on a non-probabilistic survey by Hipp and Bünning (2021) failed to confirm the hypothesis that during the coronavirus pandemic, there has been a backlash that has led to more gendered care patterns. Indeed, the findings suggested that the division of care actually became somewhat more equal during the early stages of the pandemic, although this effect wore off over time; i.e., between March and August 2020 (Hipp and Bünning, 2021, p.667). In a policy brief on the gendered division of care among German households, Kohlrausch and Zucco (2020) analyzed data from a convenience sample that covered the period of time immediately after the first lockdown (April 2020), as well as retrospective data on the period before the coronavirus pandemic. While strongly emphasizing that

¹For the UK, Sevilla and Smith (2020) did not observe any major changes in the division of care work during the coronavirus crisis. For Israel, Yaish et al. (2021) reported that the division of housework had become less equal, but they did not observe that childcare tasks were divided less equally during than before the coronavirus crisis. In the US, men and women reported a shift towards a more gender-equal division of household labor, which was mostly due to fathers spending more time on domestic tasks (Petts et al., 2021). For Spain, Farré et al. (2020) found that women shouldered most of the care burden during the pandemic, but that men increased their participation in housework and childcare at least marginally. In the realm of unpaid work, Yerkes et al. (2020) observed that gender inequality in the division of labor decreased, while gender inequality in paid work increased.

women have been more seriously affected by the pandemic than men, the authors nevertheless showed that the gendered division of care in couple households remained largely unchanged – or, to the extent that it changed, it became more equal. For example, they found that the share of men in the sample who reported that they were the main caregiver in the household increased substantially during the coronavirus crisis (Kohlrausch and Zucco, 2020, p.6). They also found that the women in the sample reported a less pronounced shift in the gendered division of care. These findings are in line with prior evidence showing that women’s and men’s perceptions of their contributions to housework and care often differ (Lee and Waite, 2005; Trappe, 2010).

Thus, while prior research did not uncover any signs of a shift towards a re-traditionalisation of care patterns during the pandemic, most studies reported that couples’ experiences have varied considerably (Hank and Steinbach, 2021; Kohlrausch and Zucco, 2020; Kreyenfeld and Zinn, 2021). In other words, it appears that the pandemic has led to a more equal division of care in some households, and to a less equal division of care in others. Thus, it is important to understand the factors that have led to this heterogeneity in the changes in care patterns.

3.2.3 Gendered work patterns during the COVID-19 pandemic

The extent to which the pandemic has affected the division of labor depended on various factors: whether mothers and fathers have been working remotely, were in marginal employment before the pandemic, have taken unpaid leave, have been working in an essential occupation, or have been unemployed or in short-time work.

The Mannheim Corona Study, which is one of the first large-scale empirical surveys that has monitored work and family life in the course of the pandemic, provided very early evidence on the uptake of remote working (Blom et al., 2020). Based on these data, Möhring et al. (2020) showed that around one-quarter of women and men who were employed in January 2020 were working remotely between March and May

2020. Frodermann et al. (2021) analyzed the transition patterns into remote work based on data from the IAB-HOPP and the Corona-survey of the Linked Personnel Panel (LPP). The findings indicated that more women than men have shifted to remote work over the course of the coronavirus pandemic (Frodermann et al., 2021, p.4). Based on the findings of the Corona Study of the National Educational Panel Study (NEPS), Zoch et al. (2021) examined the relationship between remote work and the gendered division of care. They showed that remote work by the father was positively associated with a more gender equal division of care, whereas remote work by the mother increased the chances of “mother care only”.

There are several reasons to assume that mothers were also more likely than fathers to have reduced their working hours or lost their jobs during the pandemic. First, a substantial share of mothers who work are in marginal employment, whereas marginal employment is rare among fathers. Workers who are marginally employed are especially likely to be laid off in times of crisis. In addition, these jobs are considered precarious, as they do not provide workers with unemployment benefits or short-time work compensation. There is also some evidence that mothers took unpaid leave more frequently than fathers (Möhring et al., 2021b; Zoch et al., 2021). Zoch et al. (2021, p.582), who analyzed data from the NEPS Corona Study, noted that mothers were more likely than fathers to report that they were on unpaid leave. Möhring et al. (2021b) also found that women were more likely than men to be on unpaid leave in March 2020, whereas the share of persons on unpaid leave rapidly declined over time (from 11% in March to less than 3% in May 2020). Furthermore, mothers tend to be more likely than fathers to reduce their working hours by taking advantage of child-related sick leave benefits (“Kinderkrankentage”).²

²During the coronavirus pandemic, child-related sick leave was one of the key measures the German Family Ministry used to alleviate the care burden of families. Although the scheme technically provides for “sick leave”, during the pandemic, it could be used by the parents of children who could not attend school or daycare due to closures, or because the children had to quarantine. Employees receive 90% of their prior net earnings when taking child sick leave. Unfortunately, there are no official statistics available that indicate to what degree parents made use of this leave program, and whether there were differences by gender.

While there are persuasive arguments for why women would have reduced their working hours more than men in the course of the coronavirus pandemic, there is still no consistent evidence that this actually occurred (Knize et al., 2022). A possible reason may be that there are other factors to consider: Women may have been more likely to be working in *essential occupations*. As frontline jobs in the health care sector tend to be female-dominated, some women may have faced a lower risk than men of being made redundant (Koebe et al., 2020). It has also been pointed out that the self-employed, who are more likely to be men, were hit especially hard by the pandemic (Hobler et al., 2020). The most important difference in the experiences of male and female workers during the pandemic was that men were more likely than women to be in short-time work (see next section).

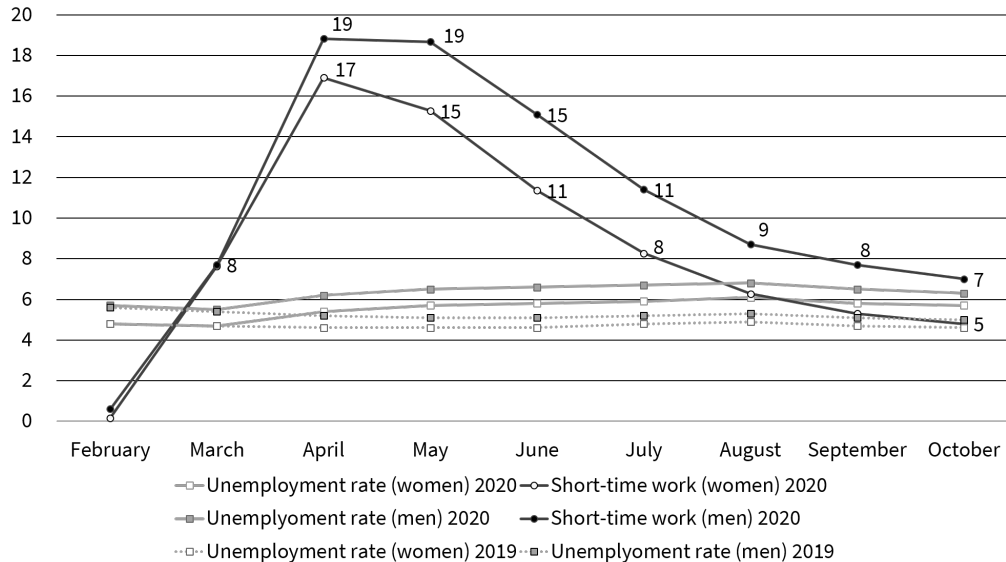
3.2.4 Short-time work in the German context

One of the main labor market policy instruments the German government uses to discourage employers from laying off large numbers of employees is the “short-time work” program. Under this program, the government subsidizes a portion of employers’ payroll costs. Firms that have to reduce their employees’ working hours according to their current needs are entitled to apply for short-time work subsidies from the Federal Employment Agency. The benefits employees receive depend on their prior earnings and on whether they have children. In the first three months of their participation in the short-time work program, employees receive 60% of their lost net salary, or 67% if they have children. From the fourth month onwards, they receive 70%, or 77% if they have children. After six months, employees receive 80%, or 87% if they have children.³ Employees in short-time work may not work at all or they may work reduced hours, while only a fraction of their earnings is compensated. During the COVID-19 pandemic, several changes in the regulations of the short-time work scheme have been implemented (for a detailed overview,

³Sectors with collective agreements receive higher benefits (Möhring et al., 2021b). As women primarily work in areas without collective agreements, they may be less likely to receive these “top-ups” (Hammerschmid et al., 2020).

see Konle-Seidl (2020)). In general, the changes made the eligibility criteria for participating in the program less stringent, and allowed for more extended periods of short-time work.

Figure 3.1: Unemployment rate by gender and share of women and men receiving short-time work benefits out of all employees, Germany by month in 2020



Source: Statistik der Bundesagentur für Arbeit (2021); Statistisches Bundesamt (2021).

In April 2020 alone, about six million employees — or around 18% of all employees in Germany — were participating in the short-time work program (Statistik der Bundesagentur für Arbeit, 2021). The COVID-19 pandemic led to a substantial increase in short-time work in many sectors with higher shares of female employees, especially the hospitality industry (accommodation and gastronomy); as well as other services in the areas of arts, entertainment, and recreation; and private household services (Gehrke and Weber, 2020). Half of the sectors in which large numbers of employees were registered for short-time work benefits have an above-average share of female employees (Hammerschmid et al., 2020). Nevertheless, no correlation was found between the share of women among the employees in an industry and the share of employees in these sectors who were participating in the short-time work program in March and April 2020 (Schäfer and Schmidt, 2020). Overall, far more male than female employees were receiving short-time work benefits during the pandemic. At the height of participation in the short-time work program in

May 2020, 19% of male employees and 15 % of female employees were receiving short-time work benefits. While participation in the short-time work scheme skyrocketed during the first half of 2020, unemployment rates in Germany remained at a modest level (Figure 3.1). It appears that compared to other countries, such as the US and the UK (Adams-Prassl et al., 2020; Alon et al., 2021). Germany had been successful in averting potential layoffs by expanding short-time work benefits in this time period.

While the short-time work scheme has been widely used in Germany during the coronavirus pandemic, we have very little evidence on how the availability of these benefits has affected parents' behavior and the gendered division of labor within the household. Möhring et al. (2021a) showed that fathers who were receiving short-time work benefits during the coronavirus pandemic in 2020 reported that their levels of family satisfaction increased significantly compared to their levels in 2019. However, (Schmid et al., 2021) reported opposite effects for the impact of short-time work on relationship satisfaction. Their results indicated that relationship satisfaction decreased if one partner was participating in the short-time work scheme. Using cross-tabulations based on data from the Mannheim Corona Study, (Bujard et al., 2020) found that receiving short-time work benefits among fathers was associated with a more equal division of labor in the household. Overall, these prior results suggest that participation in the short-time work program may have led to greater paternal involvement. However, the conclusions that can be drawn from these results are still far from clear, as these studies either provided only descriptive evidence (Bujard et al., 2020), or did not explicitly focus on the division of care work (Schmid et al., 2021; Möhring et al., 2021c,a). With our investigation, we seek to provide a more fine-grained analysis of the role of short-time work benefits. While we will analyze the experiences of both men and women, our focus is on how fathers' participation in the short-time work scheme affected the division of care in households.

3.3 Theoretical considerations and hypotheses

3.3.1 Time availability and bargaining approaches

The most crucial characteristic of the short-time work program is that it reduces the amount of time employees work. According to the time availability theory, differences in the spouses' participation in housework and childcare depend on the family's demands and the available time (Coverman, 1985). Thus, this approach argues that there is a strong relationship between the time women and men spend in paid employment and the time they spend on housework and childcare. The more time parents spend in employment, the less time they have for childcare, and vice versa. This time may be further affected by the household composition, such as the presence and the number of children in the household, as well as the size of the dwelling. During the COVID-19 pandemic, the demand for childcare has been greater than usual. Although schools and daycare centers had partially re-opened at the time of our data collection, children still had irregular daily schedules, and some were having to quarantine due to COVID-19 outbreaks in their classes and daycare centers. Furthermore, the range of leisure time and after-class activities was highly limited. Depending on the age and the health status of the grandparents, parents had few to no options to "outsource" childcare. Hence, it could be argued that the combination of the availability of short-time work benefits and the greater childcare demands in the family increased the pressure on fathers to spend their newly acquired time with their children.

Another relevant point is that short-time work benefits only cover 60% or 67% of a worker's net income. According to the relative resource theory (Blood and Wolfe, 1960), a reduction in income leads to a smaller comparative advantage in the bargaining process between partners. The partner who has a higher level of education and income is likely to minimize his/her participation in unpaid work by bargaining to avoid having to perform these tasks (Coverman, 1985). Thus, it

is possible that the drop in wages related to participation in the short-time work program weakened the bargaining power of men in couple households.

3.3.2 Doing gender

In addition to the time availability theory and the theory of relative resources, cultural theories of the division of labor should be considered. The underlying premise of these cultural theories is that “doing” housework and childcare reproduces gender roles and gender identities (West and Zimmerman, 1987). Typically, domestic and care tasks, including childcare, are ascribed to women, whereas paid work and the breadwinner’s role are attributed to men. The COVID-19 pandemic may have called into question these established gender roles. On the one hand, receiving short-time work benefits is associated with increased economic uncertainty (Möhring et al., 2021a). Thus, if the male partner is participating in the program, the couple’s awareness of the economic risks associated with gendered work patterns should increase, which may, in turn, weaken their traditional gender role attitudes. On the other hand, perceived job insecurity may threaten a father’s gender identity (Brines, 1993). Following this argument, the father would be expected to resist increasing his share in work typically performed by women when he enters the short-time work scheme, because doing so could further jeopardize his gender identity. Similarly, we would expect to find that fathers receiving short-time work benefits are less involved in childcare than fathers with regular working hours. Entrenched gender identities may override the economic rationale, such that even in situations in which the opportunity costs of the father’s time have decreased, it is still the mother who performs more of the childcare tasks.

3.3.3 Hypotheses

In the preceding sections, we have laid out the different forces that may be at play in the gendered division of childcare. On the one hand, Germany is a country that is just starting to undergo a shift in family policies and parental work patterns.

The parents who were most affected by the pandemic because they had young children were also among those who had their children after Germany had enacted a series of policy reforms (in 2005 and subsequent years). Thus, these parents were already organizing their care responsibilities more equally than their counterparts in previous decades. In addition, the Great Recession may have sharpened these parents' awareness that a more equal division of care and employment is a more secure arrangement in contemporary societies. On the other hand, it has been hypothesized that because these developments are relatively recent, they are not yet sufficiently solidified to prevent the pandemic from triggering a re-traditionalisation of behavior patterns. In particular, we argue that whether the pandemic led to a re-traditionalisation of the division of care in a given couple depended on the employment situations of the partners. Here, we formulate two competing hypotheses that focus on the role of short-time work benefits. On the one hand, we argue that the division of care should have become more equal if the father was receiving short-time work benefits. The alternative hypothesis states that the father's participation in the short-time work scheme should not have led to a major shift in the division of labor.

Similar hypotheses have been formulated regarding the effects of men's unemployment on the division of household labor and care work (Voßemer and Heyne, 2019). However, the analysis of short-time work has several advantages. Even though short-time work has characteristics similar to those of unemployment (no work, compensation of 60% or 67% of previous income), short-time work differs from unemployment in several ways. First, the transition to short-time work is more likely to affect the whole company or even the entire sector, and not just one person because s/he has a limited contract, is laid off, or is terminated. In contrast to unemployment, in which workers may select themselves into the treatment (i.e., they terminate their employment to take care of a child), the sudden increase in the number of workers participating in the short-time work program during the coronavirus crisis can be viewed as a "natural experiment". The onset of the pandemic

suddenly affected people’s work hours and their time budgets. Hence, we are in a better position than prior research on unemployment and care work to identify causal effects, and to determine whether the “treated” fathers were spending more time with their children than they had been before the crisis.

In the following, we test the hypothesis that short-time work has led to a more equal division of labor in couple households, while controlling for standard confounders (education, region, migration status, and age of the youngest child). Furthermore, we study effect heterogeneities, and investigate whether the impact of short-time work varies by the father’s level of education. Prior analysis on the parental leave benefit reform has shown that most of the fathers who took leave in response to this policy change were highly educated (Geisler and Kreyenfeld, 2019). Although the parental leave reform of 2007 was different from the short-time work regulations implemented during the pandemic in 2020, both regulations provided workers with paid leave that gave them additional time to spend with their children. To check whether our results were driven by highly educated fathers disproportionately taking advantage of short-time benefits, we performed an interaction model to make sure that the effect was similar across all educational categories.

3.4 Data, variables, and analytical strategy

3.4.1 Data and analytical sample

In order to examine the association between fathers’ participation in the short-time work program and the division of childcare in couples, we use newly available data from the IAB-HOPP (Volkert et al., 2022). This dataset is an internet survey panel monitored by the Institute for Employment Research (IAB). The sample has been randomly drawn from the German employment registers. The IAB-HOPP currently consists of seven survey waves that are available for scientific use. We use data from wave 2 (June 2020), wave 3 (July 2020), wave 4 (August 2020), and wave 5 (September/October 2020). We retrieved socio-demographic information

(educational attainment, migration background, place of residence (federal state), gender, and household characteristics) from the first wave, but did not use this wave further in our analysis because it did not include information on the gendered division of care. Our main investigation is restricted to respondents who were living in a partnership at the time of the interview and had children who were born in 2007 or later, and who were, therefore, about 12 years old or younger at the time of the interview (in 2020). We have dropped parents with older children from the analysis, as the investigation focuses on the division of care work within the household context. Although older children require attention, time, and care, the time that parents spend with teenagers cannot be easily classified as “care time”. The dataset is organized in a long format, with each person contributing up to four entries. The total number of subjects in the dataset is 786, which corresponds to 1,959 person-months (see Table 3.1 for the sample composition). Most of the analysis is restricted to the male sample that is used to study how fathers’ short-time work influenced the division of work (380 fathers and 934 person-months). However, we also report some findings for the female sample (406 mothers and 1,025 person-months), in particular to illustrate differences by gender in the perception of the division of care.

3.4.2 Variables

The dependent variable is the change in the division of childcare in a couple household, and is based on two “original” variables. The first variable captures the division of childcare before the coronavirus pandemic. This information was collected retrospectively in wave 2 using the following question: “Thinking about the time before the COVID-19 crisis: How did you and your partner split the work in the following areas?: childcare/management (homework, hobbies, appointments, birthday presents, clothes)?” The second variable captures the division of childcare at the time of the interview (in waves 2 to 5). The answers to those two questions were recorded on a five-point scale: “(almost) entirely by my partner”, “mostly by my partner”, “about half and half”, “mostly by me”, and “(almost) entirely by me”.

Based on the information on the gendered care patterns before and during the pandemic, we constructed a “change variable”. This variable reflects the within-couple changes over time; i.e., how the division of care before the pandemic (collected retrospectively in wave 2) differed from the division of care during the pandemic (collected prospectively in waves 2-5). We distinguish between:

- couples in which the father has been more engaged in childcare than before,
- couples in which the father has been less engaged in childcare than before, and
- couples in which there was no change in the division of care.

The key independent variable is whether a person was receiving short-time work benefits at the time of the interview.⁴ We distinguish between (1) employed persons who were receiving short-time work benefits, (2) employed persons who were not receiving short-time work benefits, and (3) persons who were not working (unemployed or in other forms of non-employment). We control for standard the socio-demographic variables. Level of education is classified according the CASMIN scheme, and differentiates between individuals who are and are not highly educated.⁵ We include migration background, which distinguishes between individuals whose parents were born in Germany and those who have a parent born outside of Germany. We also take into account whether a person was living in Eastern Germany (including Berlin) at the time of the survey. The age of the youngest child in the household was entered into the model as a continuous variable. We also control for the month of the interview (also as a continuous variable). In addition, the employment status of the partner was accounted for in the analysis by distinguishing between employment and other statuses. Ideally, we would have liked to have included information on whether the partner was receiving short-time work benefits or was working remotely, but this information was only surveyed in selected waves.

⁴The underlying question is: “Are you currently receiving short-time work compensation as reimbursement for loss of earnings in connection with the coronavirus crisis?”

⁵Due to very small case numbers in the low category, we had to group the low and the medium education categories together.

Hence, the case numbers were too low for such an investigation. Whether the respondent was working remotely was not included in the analysis, as this information was only available for those who were employed. We have, however, provided additional analysis for the employed in which we controlled for working from home (see Appendix C, Table C.4 and C.8).⁶

Table 3.1: Sample composition, column %

	Women	Men	All
Gender			
Male	-	-	49
Female	-	-	51
Region			
Western Germany	82	77	80
Eastern Germany	18	23	20
Migration background			
No migration background	83	85	84
Migration background	16	15	16
Level of education			
Low or medium	62	58	60
High (CASMIN 3a,3b)	38	42	40
Employment status			
Employed: Short-time work	6	19	12
Employed: No short-time work	54	73	64
Not working	40	8	24
Employment status partner			
Not working	7	21	13
Working	93	79	87
Mean age of the youngest child	5.68	5.40	5.55
Interview month			
June	25	27	26
July	23	25	24
August	24	26	25
September/October	28	22	25
Sample size	406	380	786
Person-months	1,025	934	1,959

Source: IAB-HOPP waves 2-5, own weighted estimates.

⁶Furthermore, we could not control for essential occupations, because occupational codes are only available from the employment registers. While the IAB-HOPP could be technically combined with the employment registers, only the occupation of those respondents who agreed to record-linkage could be considered. However, this would further limit the sample and lead to low case numbers. Moreover, it was not possible to add information on the partner's occupation.

Table 3.1 provides the weighted sample composition.⁷ The table shows that the distribution of educational attainment was very similar in the male and the female samples. However, the table also indicates that there were stark gender differences in the prevalence of short-time work. At the time of the interview, 19% of the men, but only 6% of the women, were receiving short-time work benefits. Thus, it appears that the gender differences in participation in the short-time work program were larger among the parents in our sample than they were in the total population (see above). Further analysis showed that participation in the short-time work program was much more common among workers with low and medium education than among highly educated workers (see Table C.1 in the Appendix C). However, we also found that a much larger share of the women (40%) than of the men (8%) were not in the labor market at the time of the interview. This pattern was also reflected in the employment status of the partner. On average, the youngest child in the household was slightly older than five years old.

3.4.3 Analytical strategy

In the following empirical analysis, we investigate how receiving short-time work benefits affected the gendered division of care work. In a first step, we provide descriptive insights into the division of care in the period of June to October 2020, as well as in the period before the pandemic. We also provide descriptive evidence on the changes across time. In a final step, we employ multinomial logistic regression models. The dependent variable is coded “1” if the father reduced his childcare share, “2” if the division of childcare tasks remained stable, and “3” if the father expanded his relative contribution to childcare tasks during the coronavirus crisis. We investigate a main model that controls for short-time work and socio-demographic control variables. Furthermore, we estimate an interaction model that investigates whether the effect of short-time work was similar across all educational categories.

⁷Our analytical sample only includes a subset of the original sample. In particular, we do not use data from the refreshment sample that was drawn in wave 5. As a result, we cannot use the standard weights that are provided with the data set. We have used weights that were tailored to our specific sample.

The results are reported as average marginal effects. We visualise the average predicted probabilities of the main variable of interest (employment status, including the realisation short-time work) in figures. As we observe the same persons multiple time in the data, we have estimated robust standard errors in all specifications. The multiple regression analysis focuses on the male sample (for analysis of the female sample, see Appendix C).

3.5 Results

3.5.1 Descriptive results

Table 3.2 displays the distribution of childcare chores during the period of June to October 2020, and clearly shows that the childcare patterns were gendered: only 24% of all couples were sharing childcare equally. In most cases, the woman was providing most of the care. In less than 5% of the cases, the father was the primary caregiver. In essence, the overwhelming majority of couples (roughly 70%) were following a more traditional division of labor. These results correspond well to recent evidence from other studies (Samtleben et al., 2020). While the observation that 70% of couples were in a traditionally organized partnership may appear to show that the German society is far from gender-equal, this finding has to be contextualized. Germany has been a strongly conservative and familialistic regime for decades, and is only gradually moving in a new direction. Other studies that have included longer time trends than ours have shown that in Germany, there is a strongly positive time trend towards greater gender equality (Samtleben et al., 2020; Zabel and Heintz-Martin, 2013). The results of our analysis suggest that the pandemic may have even accelerated this positive trend, as the distribution was slightly more unequal before the crisis (see also Globisch and Osiander, 2020). We find that the share of couples in which the father increased his engagement (20%) was higher than the share of couples in which the father reduced it (16%). In 64% of the couples, the pandemic left the division of care unchanged.

Table 3.2: Division of childcare, column %

Division of Care	Women	Men	Total
Division of Care During the Coronavirus Crisis			
Father (entirely or mostly)	2	5	3
Both equally	16	32	24
Mostly mother	32	46	39
Entirely mother	50	17	34
Division of Care Before the Coronavirus Crisis			
Father (entirely or mostly)	1	2	1
Both equally	17	26	22
Mostly mother	34	51	42
Entirely mother	48	21	35
Change in Division of Care			
Father decreased share	17	15	16
No change	67	61	64
Father increased share	16	24	20
Sample Size			
Persons	406	380	786
Person-months	1,025	934	1,959

Source: IAB-HOPP waves 2-5, own weighted estimates.

The analysis also shows that fathers and mothers had different perceptions of their contributions to childcare, with women being much more likely than men to say they believe that the mother is “entirely” responsible for childcare, while men were more likely to say that the mother is “mostly” responsible. Women and men also had different perceptions of the changes over time. According to the female respondents, only 16% of the fathers had increased their “care share” over the course of the coronavirus pandemic, while the corresponding figure cited by the male respondents was 24%. While this discrepancy is very disturbing, it is in line with prior research, which has regularly shown that men and women tend to overstate their own contributions to housework and care, and to underestimate those of the other partner (Lee and Waite, 2005; Trappe, 2010). The division of care may also be sensitive to the wording of the question. The question that we used asked parents to report on the division of care, including the management of care. The items “homework, hobbies, appointments, birthday presents, clothes” were mentioned in the question. This may have elicited a different answering pattern than if these “managerial dimensions” of childcare had not been mentioned explicitly. Naming

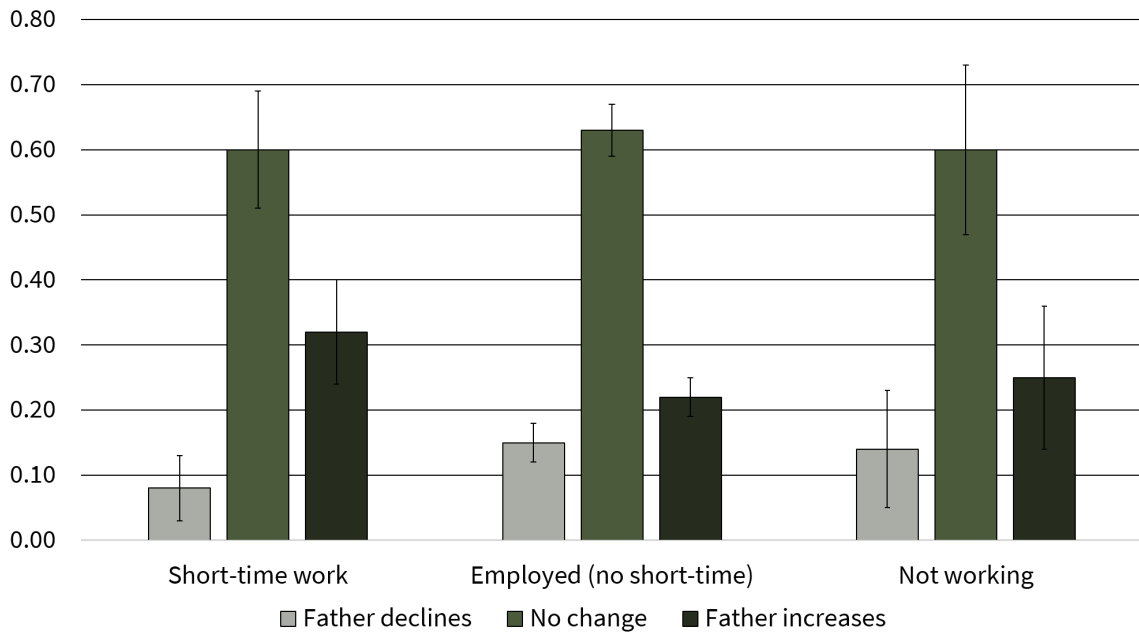
these tasks seems to have led to greater discrepancies in male and female responses than simple questions that asked respondents about the division of childcare (see Figure C.1 and C.2 in the Appendix C, which provide a cross-tabulation for an alternative measure of the division of care).

3.5.2 Multiple regression results

Figures 3.2 and 3.3 plot the predicted probabilities (average margins) for the main variable of interest from the multinomial logistic regression for male respondents (Figure 3.2). The figure provides a clear pattern, whereby receiving short-time work benefits significantly increased the chances that a father expanded his share of the childcare tasks. The predicted probability of increasing the childcare load was 32% for fathers in short-time work, compared to only 22% for fathers in regular employment, and 25% for non-employed fathers. Thus, the impact of non-employment is found to be similar to the impact of employment, and to be much weaker than the effect of short-time work. It is important to take into account that only a small share of the fathers were not working during the study period (see Table 3.2). In addition, we cannot rule out the possibility that there was some selection into non-employment among the fathers, which we assume was attenuated for those receiving short-time work benefits.

The full model results, and, thus, the effects of the other covariates, are displayed as average marginal effects (AME) in Table C.1 in the Appendix C. The results show a negative time trend for fathers' involvement, which is in line with the findings of earlier studies (Hipp and Bünning, 2021). Partner's employment had the expected positive effect on fathers' engagement. However, the parameters for the socio-demographic variables (such as Eastern and Western Germany, age of the children, and migration background) were not significant. Here, we should emphasize that while we observe no significant effects on changes in behavior, we do find differences in the division of work between subgroups, such as between fathers in

Figure 3.2: Average predicted probabilities from multinomial regression model, male sample



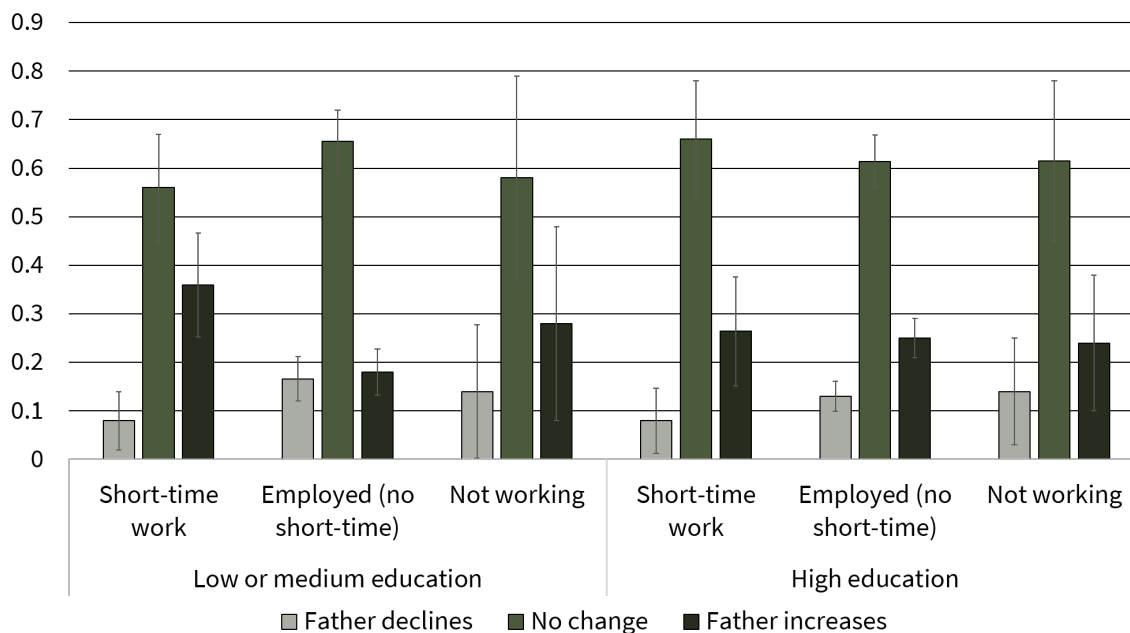
Note: Further control variables are education, migration background, age of the youngest child, region (East/West), partner's employment status, interview month.
Source: IAB-HOPP waves 2-5, own estimations

Eastern and Western Germany (for investigations on determinants of the division of care, see Table C.9 - Table C.12 in the Appendix C).

The Appendix C also includes additional sensitivity analysis. A model in which we excluded all fathers who were completely engaged in childcare tasks before the pandemic – and who were therefore unable to further increase their engagement – did not alter the results (see Appendix C, Table C.2). In addition, a model that controlled for childcare engagement before the pandemic generated comparable estimates (see Appendix C, Table C.3). We also estimated separate models for the employed fathers and controlled for remote work (see Appendix C, Table C.4). We find that remote work was conducive to fathers' engagement, but that the effect was only borderline significant. We also estimated the same models for the female sample (see Appendix C, Tables C.5 - Table C.8). However, for mothers, no association between being in short-time work and increasing their already large childcare share could be observed.

3.5.3 Effect heterogeneity

Figure 3.3: Average predicted probabilities from multinomial regression model separated by educational status, male sample



Note: Further control variables are education, migration background, age of the youngest child, region (East/West), partner's employment status, interview month.

Source: IAB-HOPP waves 2-5, own estimations

In a final step of our investigation, we estimated an interaction model to ensure that the effect of education was not driven by the behavior of highly educated men. Figure 3.3 shows the predicted probabilities from this model. The interaction model reveals that the prior results were not driven by the highly educated men. Indeed, the model shows quite the opposite: namely, that fathers with low or medium education were more likely to increase their paternal involvement in response to being in short-time work. Among the low or medium educated fathers, the probability of increasing their care load was 36% when they were subject to short-time work compared to 18% when they were regularly employed. Among the highly educated, the probability to increase the care share is the same (roughly 25%), regardless of whether the father was regularly employed or in short-time work. For the non-employed, the patterns were fairly similar across educational categories (roughly 25% of fathers who increased their care share). Overall, the results from the interaction model do

not support the assumption that highly educated men have been the vanguards in taking on further childcare responsibilities in the coronavirus pandemic. Fathers with low or medium education were not only more likely than highly educated fathers to be receiving short-time work benefits (see Table C.13 and Table C.14 in the Appendix C); if they were on short-time work, they were also more likely to increase their share of childcare.

3.6 Conclusion

This paper has examined how the growing prevalence of short-time work among fathers affected changes in childcare arrangements in couples in Germany between two time periods: before and during the COVID-19 pandemic. We used IAB-HOPP data that included prospective data on the division of childcare for June to October 2020. The study also surveyed the division of care with a retrospective question that asked respondents how they arranged care before the coronavirus pandemic (without specifying any further the exact point in time). The analytical sample included parents in couple households with children aged 12 and younger.

The results of our study may be summarized as follows. The division of childcare in couples in Germany was found to be mostly traditional, with mothers shouldering the bulk of the childcare duties in 70% of couple households. While the patterns were traditional overall, we did not observe a shift towards a “re-traditionalisation” of care patterns during the pandemic. However, the results of the investigation also echo those of prior studies that have shown that there are substantial differences between couples. In some couples, the coronavirus crisis led to a decline in paternal engagement (14%), while in other couples, fathers became more engaged (22%). However, no changes were observed in 64% of the couples.

There are various processes that may have contributed to a shift away from or towards greater gender equality in childcare. In this study, we have primarily focused on the role of short-time work. The short-time work program was one of the main measures the German government used to combat an increase in unemploy-

ment during the coronavirus pandemic, with men being more likely than women to participate in the scheme. In our study, 19% of the fathers, but just 6% of the mothers, were in short-time work during the June to October 2020 period. Our multiple regression results, which controlled for standard socio-demographic confounders, showed that short-time work benefits may have been an “enabler”, with a significant share of men using the time they gained to increase their engagement in care work. We found that 32% of the fathers in short-time work, compared to 22% of the fathers in regular employment, made progress towards a more equal division of care. Additionally, education was shown to moderate this effect: among fathers who were receiving short-time work benefits, those with low or medium educational levels were more likely to expand their childcare share than those with high levels of education.

In light of these findings, we argue that examining the effects of participation in the short-time work program can provide us with a deeper understanding of the potential to encourage men to change their work patterns through paid leave benefits. Thus, the implications of our research results go beyond the narrow context of the coronavirus pandemic by providing a positive assessment of the potential effectiveness of paid leave policies. The 9th Family Report advocates for an extension of paid parental leave for fathers (BMFSFJ, 2021). Our study provides support for the argument that measures of this kind are highly effective in encouraging fathers to become more involved in the lives of their children. We can also conclude that this positive effect is not limited to highly educated fathers – who are commonly regarded as the vanguards of engaged parenting – and that such measures can reach all layers of society.

However, some caution seems warranted in interpreting these results. While this study has provided novel and policy-relevant results, our investigation has many limitations. Most importantly, we found glaring differences in mothers’ and fathers’ perceptions of their own contributions to care. Our analysis relied on a measure that asked parents how they divided childcare tasks and the management of child-

care in which “homework, hobbies, appointments, birthday presents, clothes” were explicitly included in the wording of the question. Prior studies have shown that there is a difference between “active” childcare tasks and the mental and practical management of them. While it is known that fathers and mothers tend to differ in their perceptions of their own and their partner’s childcare activities, even larger differences have been observed in mothers’ and fathers’ perceptions of the “management” of care (Lee and Waite, 2005). The IAB-HOPP also included an alternative measure of the division of care for selected years, and the gender differences were less pronounced for these items (see Figure C.1 and C.2 in the Appendix C).

It is also important to note that the answering categories raise concerns. The IAB-HOPP relied on well-tested items to operationalize the gendered division of care, which are also used in other surveys. These items are: “(almost) entirely by my partner”, “mostly by my partner”, “about half and half”, “mostly by me”, and “(almost) entirely by me”. These batteries may no longer be suitable during periods in which gender role behavior is shifting, and in which substantial shares of fathers and mothers are oscillating between the categories of “for the most part the mother” and “completely the mother”. Time-use data for both parents can certainly provide a more fine-grained account of the division of care within the household.

There are other limitations that must be mentioned. First, we relied on retrospective information on the division of care before the coronavirus crisis. It is well known that the collection of past behavior and attitudes is severely affected by recall bias. For example, the respondents may have had a more positive recollection of their past division of care Hipp et al. (2020). If that was the case, the coronavirus pandemic had an even more positive effect on the gendered division of care than we measured with our data. Another important limitation of our investigation is that the IAB-HOPP is not a household survey. While it provided us with information on the gendered division of care in the household and some selected partner information, it did not allow us to examine the interaction of partner characteristics at the

household level. A related problem is that we did not have sufficient information on whether the partner was working in a frontline occupation, or was working remotely.

The survey was also limited in terms of household characteristics. For example, we had no information on whether the family was a nuclear family or a stepfamily. Thus, we labeled the respondents in our sample “fathers” and “mothers”, even though they may not be the biological parents of the children. Given that stepfatherhood is more common than step-motherhood, we may have underestimated the “care share” of biological fathers in Germany by using data of this kind (Kunze, 2019; Steinbach, 2008). As stepfamilies make up about 10% of all families in Germany, this is a serious concern (Steinbach, 2008). Furthermore, the gender of the respondents’ partner was not surveyed in the IAB-HOPP. As a result, we were not able to differentiate between homosexual and heterosexual unions. This is a limitation, as there is evidence that heterosexual couples and homosexual couples organize their care work differently (Evertsson et al., 2021). Our analysis was restricted to the period of June to October 2020. The “care burden” has varied greatly across time in Germany because of the erratic and regionally diverse patterns of school and day-care closures, lockdown measures, and school holidays. As the IAB-HOPP includes regional information, there is scope for future studies to better account for these contextual factors and their dynamics across time. Moreover, further studies can seek to address other questions, such as whether the early months of the coronavirus pandemic were unusual, and whether there have been additional shifts towards a more equal or unequal division of care with the increasing duration of the pandemic.

Overall, our investigation paints a rosy picture of the potential for fathers to become more involved in childcare. Caution is surely warranted in considering these findings, as we have provided evidence for only a brief period of time. The effect of short-time work on the gendered division of care may be short-lived, and could evaporate once men return to their normal work schedule (Boll et al., 2021). In addition, while our analysis refuted the re-traditionalisation hypothesis in the aggregate, we detected large differences across population sub-groups. Even if care patterns have

become more equal in households in which the father has been in short-time work, they may have become less equal in other households. There is, for example, some evidence that couples who had a very unequal division of care before the crisis had an even less equal division of care during the crisis (Jessen et al., 2021). Thus, for some couples, the pandemic may have entrenched existing traditional care patterns.

Last but not least, we only investigated care patterns, and we did not examine the stress and worries that were caused by the organization of childcare and the incompatibility of work and family life. There is evidence that this “mental load” was heavier for women than for men (Steiber et al., 2022; Li et al., 2022). It is also important to emphasize that our analysis was restricted to couple households. Single parents, who are overwhelmingly mothers, have experienced a particularly large care burden during the pandemic. As they were not part of our investigation, our analysis gives only a partial account of the gendered effect of the pandemic on care patterns.

4

The division of housework and childcare
from a dyadic perspective: Discrepancies
between partners' reports across the
transition to parenthood

Abstract

BACKGROUND

There is a large body of research on the gendered division of domestic labor, but differences between women's and men's reported contributions to childcare and housework remain a conundrum.

OBJECTIVE

This study examines the perception gap in the division of housework and childcare to understand how this gap changes across the transition to parenthood and how it is influenced by women's and men's socioeconomic characteristics.

METHODS

I use data from the German Family Panel (pairfam). The survey's multi-actor design allows me to include both partners' reports on the labor division. The analytical sample consists of cohabiting different-sex couples who had their first child during the observation period ($n = 384$). I employ logistic regressions to study the factors that determine the perception gap.

RESULTS

In line with prior research, I find that there is a substantial perception gap (around 30% for housework; around 25% for childcare). Further, the factors influencing perception gaps are strongly gendered. Employment and education do not appear to affect perception gaps among men, but do among women: Perception gaps are lowest in couples where women are employed or highly educated.

CONTRIBUTION

This study demonstrates a gendered association between employment status and educational levels and the prevalence of a perception gap across the transition to parenthood. Researchers should be aware of a potentially increased risk of mismatches in these reports, especially when surveying employed men.

4.1 Introduction

Research has provided evidence that the division of labor changes dramatically across the transition to parenthood (Grunow et al., 2012; Kühhirt, 2012). A consistent finding is that even couples with a relatively equal division of labor before the birth of their first child divide childcare and housework unequally thereafter, with women doing more of the domestic labor than men (Büchau et al., 2023). While the literature on the determinants of couples' division of domestic labor has proliferated in recent years, little attention has been paid to differences in the perceptions of the division of housework and childcare in couples, hereafter referred to as the perception gap. Differences in men's and women's perceptions of their respective contributions to housework and childcare may have diverse consequences. First, these differences may lead to systematically underestimate or overestimate the gendered division of labor depending on whether they use women's or men's reports. Second, researchers may draw false conclusions about the sociodemographic correlates of a gendered division of domestic labor if the perception gap is not distributed randomly but by characteristics such as education or employment.

Although the perception gap has been studied for decades (Granbois and Willett, 1970), research incorporating both partners' views is still rare. Existing research has identified an egocentric bias: Respondents' reported own contribution to unpaid work is often higher than what their partners report for them. Based on the mean difference between women's reported housework time and the time estimated by their partners, studies find a weekly difference of 20 to 60 minutes (Bryant et al., 2003; Lee and Waite, 2005; Winkler, 2002). When estimating the amount of time men spend per week on housework, husbands and wives differ in their reports between three and four hours (Kamo, 2000; Lee and Waite, 2005). Since the transition to parenthood is accompanied by role-formation processes and an increase in workloads, it is a time with a higher prevalence of discrepancies between men's and women's perceptions of the division of housework (Kluwer, 2010). Studies focusing on fathers' contributions to childcare show that both partners' reports are similar, but that

mothers consistently report lower paternal participation levels than fathers (Charles et al., 2018; Coley and Morris, 2002). It has also been found that higher maternal education and employment are correlated with higher discrepancies in reports on childcare (Coley and Morris, 2002).

This paper contributes to the existing research by drawing on recent dyadic data from the German Family Panel (pairfam) and employs logistic regression models to examine how respondents' employment status and level of education influence the perception gap. According to theoretical work on the division of labor, labor market attachment is a crucial predictor for the distribution of domestic labor and presumably also for the perception gap. When women are employed, I therefore expect that the division of labor has been discussed and negotiated between partners and that differences in perception are smaller. Previous research has shown that highly educated men tend to have a more equal division of labor in their relationships than less-educated men. Applying this finding to the perception gap, I expect male respondents with high levels of education to agree with their partner's statements about the division of domestic labor more than less-educated men.

4.2 Data and methods

4.2.1 Data

This study uses data from the annual pairfam survey, a multi-actor study launched in 2008 (Brüderl et al., 2022). The pairfam study follows a cohort design (1971/1973, 1981/1983, 1991/1993), with 12,000 respondents in the first wave. These main respondents were asked to provide consent for their partners to be interviewed. About half of the partners participated in the partner survey. The dyadic structure of the data allows for analysis of whether the female and male partners report the same division of housework and childcare. The unit of analysis is the individual in couples that live together and had their first child during the observation period. The sample was restricted to respondents who provided valid information on the

division of labor and whose partner did as well. I follow couples from the year before childbirth up to two years after the first child was born. For the analysis of the division of housework, the total number of respondents is 384 (1,439 person-years). For the analysis of childcare, the number of respondents is 384 (1,065 person-years).

Perception gap

The analysis draws on two dependent variables: the housework and the childcare perception gap. The perception gap is operationalized by the deviations between men's and women's perceptions of the division of childcare and housework in their relationship. The perception gaps were measured with questions about whether the childcare or housework is done (1) completely by the woman, (2) mostly by the woman, (3) split about 50/50, (4) mostly by the man or (5) completely by the man. The male partners' reports were deducted from the female partners' reports and grouped into the following categories: (0) respondents whose reports match and (1) respondents whose reports do not match. Note that reports may not match because the main respondent may underestimate his or her own contribution. Such underestimations are not widespread and only apply to 15% of the sample. As Ruppanner et al. (2018) demonstrate, the overreporting of one's own contribution has tremendous effects on relationship quality, but underreporting does not. I therefore treated these cases as matching reports. Excluding this group from the analysis does not lead to different results.

Independent variables

I control for employment status, which is operationalized as a dichotomous variable (not working vs. working). The categories were based on labor force status, where not working includes being in education, on parental leave, a homemaker, unemployed, and retired. Working includes vocational training, full-time employment, part-time employment, marginal employment, and self-employment. Further, the models control for the respondent's gender (male/female) and age (as a continuous variable). The level of education differentiates between low and medium (CASMIN = 1a-2c), and high education (CASMIN = 3a, 3b). I consider whether the respon-

dent is living in Eastern Germany. Further, I differentiate between cohabiting and married couples. To examine how the perception gap changes over time, I distinguish the year prior to birth (for housework only), the year of birth, one year and two years after childbirth.

Sample

As shown in Table 4.1, around 45% of the respondents had a high level of education. Only 6% of the male sample were not working across the transition to parenthood, while almost half of the women were not working. 71% of the sample were married. Men were 34 and women 31 years old on average. 29% of the respondents were living in Eastern Germany.

Table 4.1: Sample characteristics, column %

	Housework			Childcare		
	Women	Men	Total	Women	Men	Total
Education						
Low or medium	53	56	55	53	56	55
High	47	44	45	47	44	45
Employment						
Not working	47	6	23	57	6	27
Working	53	94	77	43	94	73
Region						
West	74	70	71	74	70	71
East	26	30	29	26	30	29
Married						
No	26	31	29	21	27	25
Yes	74	69	71	79	73	75
Age at first birth (mean)	31	34	33	31	34	33
N (person-years)	842	597	1439	623	442	1065

Source: pairfam, waves 1-13, unweighted own calculations.

4.2.2 Analytical strategy

First, I provide descriptive evidence on the prevalence of the perception gaps across the transition to parenthood. Second, I present estimations of logistic regression models for housework (M1) and childcare (M2) including the employment status

and control variables. Models including an interaction term for employment status, gender, and education were computed to control for effect heterogeneity. The results of the interaction model are visualized as predicted probabilities. All models were estimated with robust standard errors.

4.3 Results

4.3.1 Descriptive results

Figure 4.1: The division of housework and childcare and the perception gap across the transition to parenthood



Source: pairfam, wave 1-13, unweighted own calculations.

Figure 4.1 displays the perception gap in housework and childcare across the transition to parenthood. Although women are the primary housework providers, most couples start with a relatively egalitarian division of housework in the year before the childbirth, with around 45% reporting an equal division of housework. This changes drastically in the year the child is born, when around 75% of couples

report that the female partner is the primary childcare provider. However, the percentage of couples that share responsibility for childcare increases from 19% in the year of childbirth to 34% two years after childbirth. The share of couples agreeing on the division of housework is highest in the year prior to birth (77%) but decreases by 7% in the year of childbirth. Overall, 24% of couples exhibit a perception gap in childcare. In the year of the first child's birth, the share of couples with different perceptions is 29% and decreases to 21% two years after childbirth.

4.3.2 Multiple regression results

The model results are displayed as odds ratios in Table 4.2. The results for the dependent variable housework perception gap indicate that the employment status of the respondent has no statistically significant effect on the perception gap. In line with previous research, highly educated respondents are less likely to report a perception gap in housework (Kamo, 2000). Further, the odds of reporting a perception gap in housework are lower for women than for men. In the year before childbirth, the probability of a perception gap in housework is lower than in the year of birth. This is not surprising since the disruption of the routine before childbirth might cause confusion about who is doing what, and about what is perceived as housework and what as childcare. The respondent's age is positively associated with a housework perception gap, contrary to a previous finding by Charles et al. (2018). Couples living in Eastern Germany are less likely to exhibit a perception gap, and marriage has no effect on the perception gap. The results for the perception gap in childcare are similar to those for housework. The odds ratios differ only regarding the years following childbirth: The probability of mismatches in the reports on the division of childcare decreases in the years following childbirth in comparison to the year the child was born.

The results of the interaction models to account for effect heterogeneity of employment and education by gender are displayed as predicted probabilities in Figures 4.2 and 4.3. Figure 4.2 displays a clear pattern in which employment at the tran-

Table 4.2: Logistic regression models, odds ratios, z-statistic in parentheses

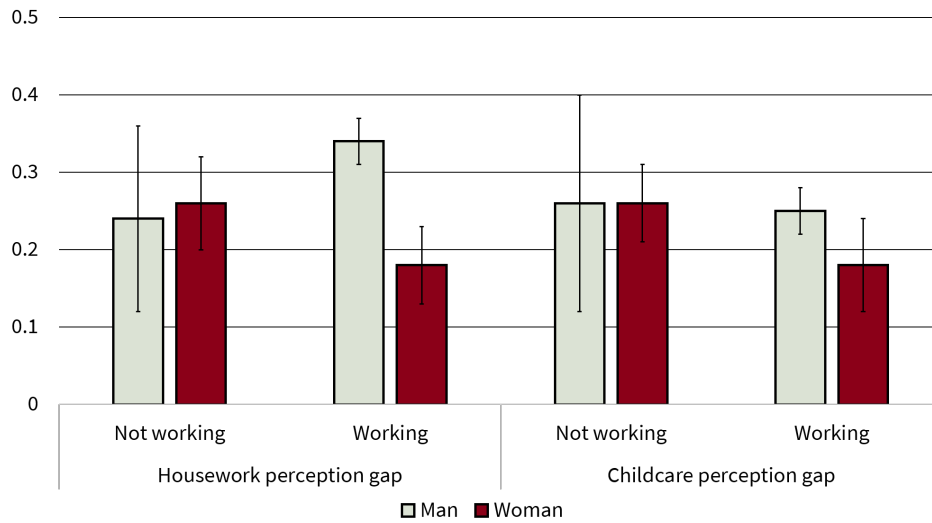
	Housework gap	Childcare gap
Not working	Ref.	Ref.
Working	0.815 (-1.15)	0.708 (-1.64)
Low or medium education	Ref.	Ref.
High education	0.798* (-1.87)	0.778* (-1.69)
Man	Ref.	Ref.
Woman	0.495*** (-4.85)	0.733 (-1.63)
Year before birth	0.795 (-1.29)	
Year of birth	Ref.	Ref.
1 year after birth	1.166 (0.94)	0.779 (-1.43)
2 years after birth	1.115 (0.61)	0.700* (-1.79)
Age	1.034** (2.43)	1.041** (2.36)
Western Germany	Ref.	Ref.
Eastern Germany	0.664** (-2.79)	0.766 (-1.51)
Not married	Ref.	Ref.
Married	0.841 (-1.22)	0.957 (-0.24)
Constant	0.283** (-2.48)	0.233** (-2.34)
N	1439	1065

Source: pairfam, wave 1-13, unweighted own calculations

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

sition to parenthood has gendered effects on the chances of a perception gap. The probability of reporting mismatch in the division of housework is 34% for working male respondents but only 18% for working female respondents. The differences in the predicted probabilities for the perception gap in childcare are less pronounced: The probability of a childcare perception gap is 25% for a working male and 18% for a working female respondent. The predicted probabilities of respondents over-reporting their own contribution to housework or childcare do not vary notably by gender for respondents who are not working.

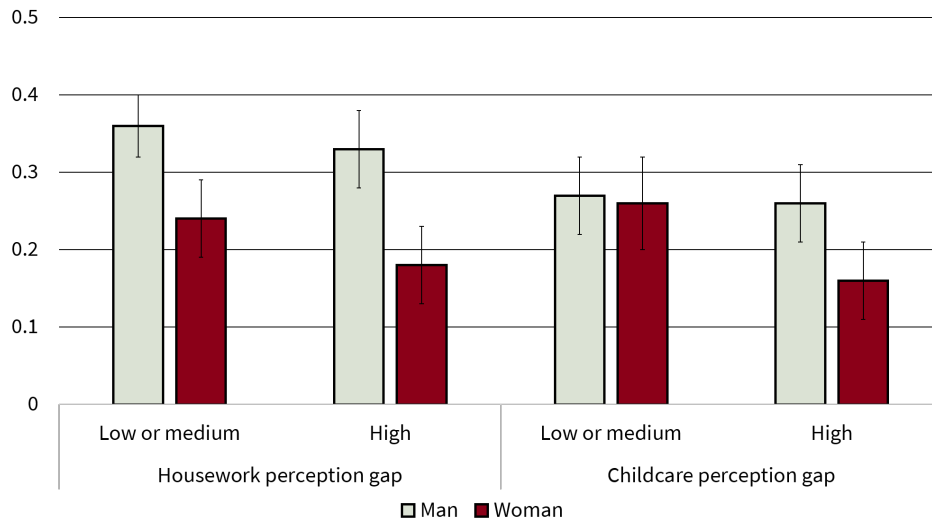
Figure 4.2: Average predicted probabilities from logistic regression model:
employment status



Note: Further control variables are respondent's employment status, age, marital status, region (Western vs. Eastern Germany, timing of the birth of the first child). Confidence intervals at 95%.

Source: pairfam, waves 1-13, own estimations.

Figure 4.3: Average predicted probabilities from logistic regression model:
educational level



Note: Further control variables are respondent's working status, age, marital status, region (Western vs. Eastern Germany, timing of the birth of the first child). Confidence intervals at 95%.

Source: pairfam, waves 1-13, own estimations.

Figure 4.3 shows again a clearly gendered picture: The probability of a perception gap is always higher when the respondent is male. Interacting the level of education and respondents' gender reveals a more pronounced reduction in the prob-

ability of a perception gap for highly educated female than for highly educated male respondents. While the predicted probabilities of a perception gap in housework differ by 6% for female respondents, they differ by 10% for childcare between highly educated and lower-educated female respondents. The differences in the predicted probabilities for male respondents by educational level are less pronounced.

4.4 Discussion

This study highlights the existence of housework and childcare perception gaps across the transition to parenthood. Overall, mismatching reports between partners are more prevalent for housework than for childcare. The higher share of couples with a perception gap in housework than in childcare coincides with an argument that couples discuss and negotiate the division of childcare, particularly when their children are very young, whereas they may not come to an explicit agreement over the division of housework. Results from the logistic regressions show that employment and education have gendered effects on both perception gaps. The predicted probability that partners differ in their reported division of housework is highest when the respondent is male and employed. In contrast, the lowest predicted probability of a perception gap can be found for employed female respondents. Women are still seen as the main providers of domestic work. The reason for the gendered effect of working on the perception gap could be that when the female respondent is working across the transition to parenthood, the couple deviates from the standard arrangement and needs to come to an explicit agreement regarding the division of labor. Thus, both partners are more aware of what each one is contributing. Similarly, the results for the interaction of education and gender show that the couples in which the female partner is highly educated have the lowest probability of reporting a perception gap. Considering that highly educated fathers are often seen as the vanguard of engaged parenting, the evidence of a perception gap in the present study does not confirm this picture. The results suggest that those most likely to report perceptions of childcare or housework that match their partners' perceptions

are female respondents who are either highly educated or employed at the transition to parenthood. This study has several limitations. One is the small case number, which did not allow further differentiation of the employment status or level of education and generally limited the number of control variables in the regression. Although this study provides first evidence that the occurrence of perception gaps across the transition to parenthood is elevated for male, employed, and highly educated respondents, this needs to be further tested within a larger sample. Another limitation is the measurement of the labor division as the share of housework or childcare that the respondent contributes. Mapping the division of labor to five categories prevents a more nuanced description of the mismatches and potentially underestimates the perception gap. As this study has shown that perception gaps in couples are not distributed randomly, future research should take a dyadic perspective, especially when examining the effects of family policy reforms on the division of labor in couples.

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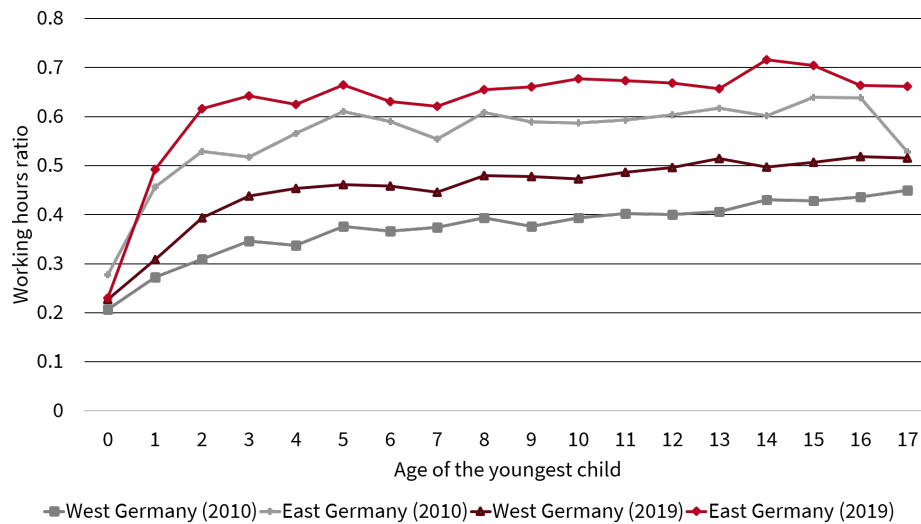
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Appendix A

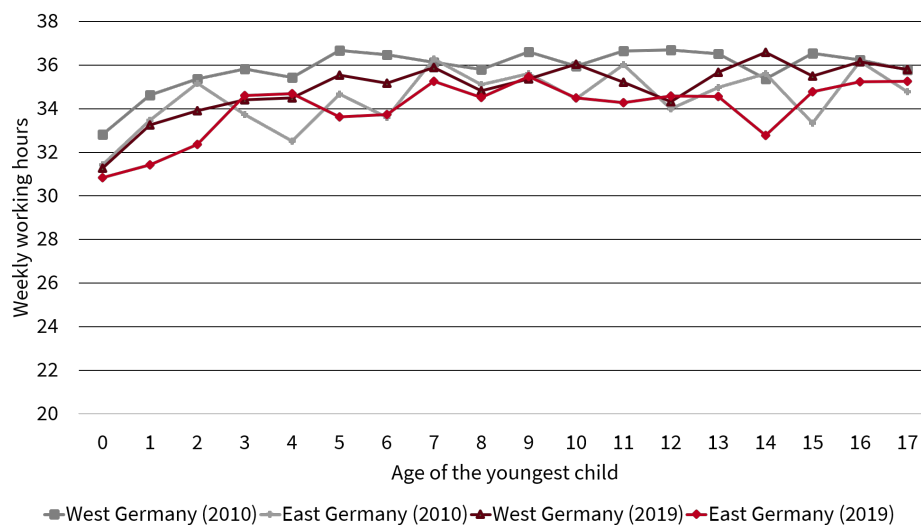
Figure A.1: Average weekly working hours for women in couple households by the age of the youngest child in 2010 and 2019



Source: Microcensus 2010-2019. Own unweighted estimation.

Note: The sample consists of women 20-55 who live with different-sex partner in the same household. The working hours are operationalized as the *actual* weekly working hours. The actual working hours for non-working persons are coded as 0 working hours.

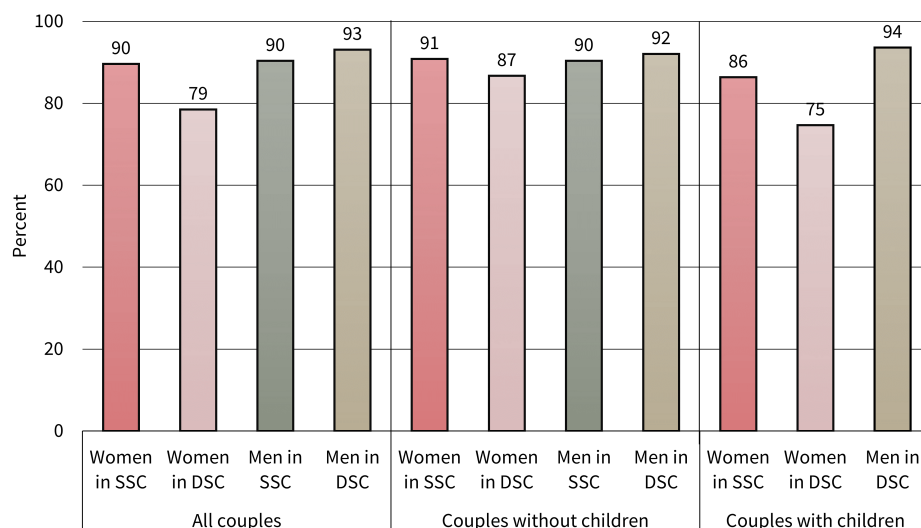
Figure A.2: Average weekly working hours for men in couple households by the age of the youngest child in 2010 and 2019



Source: Microcensus 2010-2019. Own unweighted estimation.

Note: The sample consists of men 20-55 who live with different-sex partner in the same household. The working hours are operationalized as the *actual* weekly working hours. The actual working hours for non-working persons are coded as 0 working hours.

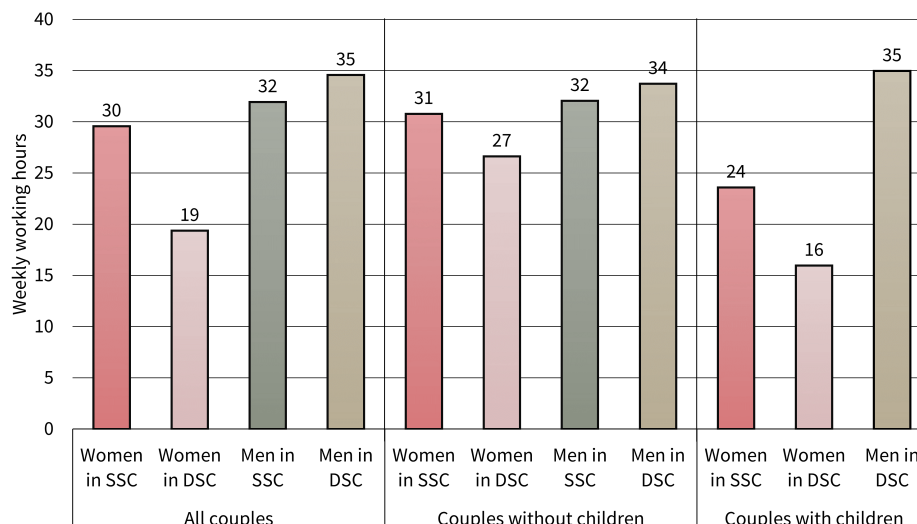
Figure A.3: Annual employment rate of men and women in different-sex and same-sex couple households separately for couples with and without children ages 0-17 in the household



Source: Microcensus 2010-2019. Own unweighted estimation.

Note: The sample consists of men and women aged 20-55 who live with a partner in the same household unit.

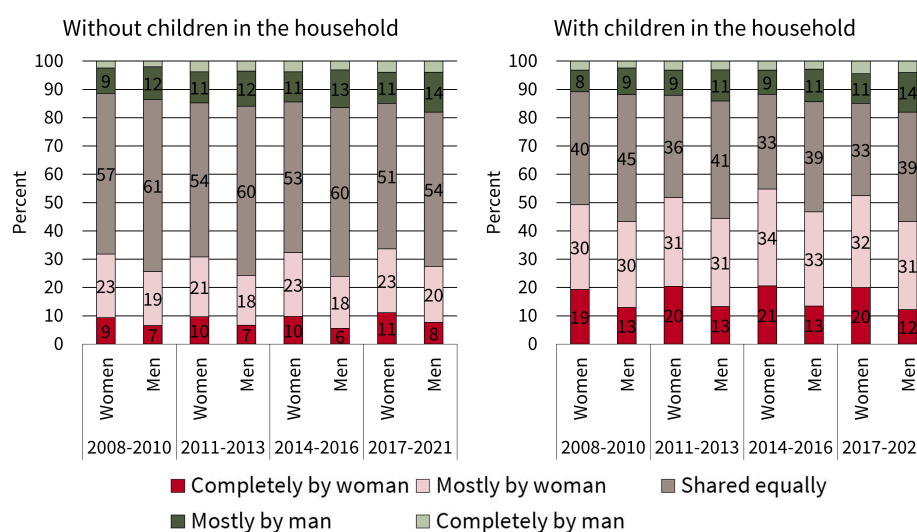
Figure A.4: Average paid weekly working hours for men and women in different-sex and same-sex households separately for couples with and without children ages 0-17 in the household



Source: Microcensus 2010-2019. Own unweighted estimation.

Note: The sample consists of women and men 20-55 who live with partner in the same household. The working hours are operationalized as the *actual* weekly working hours. The actual working hours for non-working persons are coded as 0 working hours.

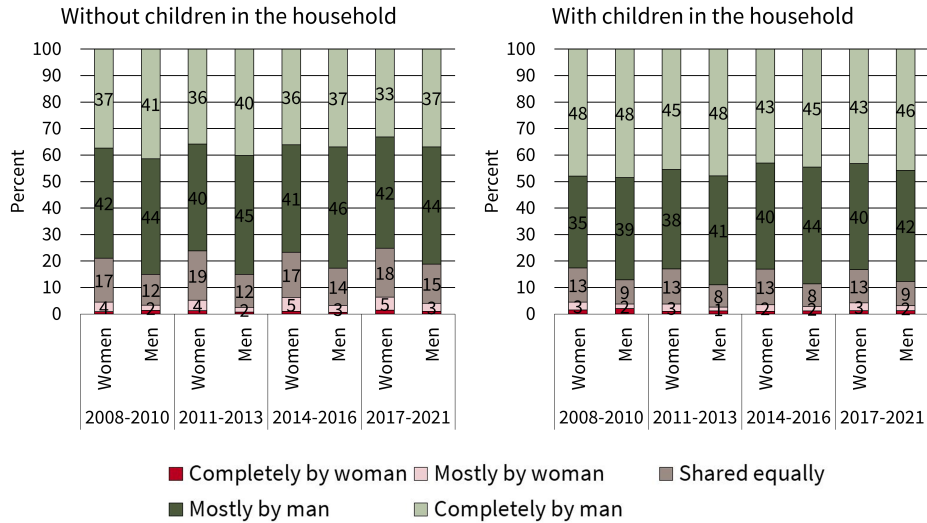
Figure A.5: The division of shopping by gender of the respondent for couples with and without children aged 0-17 in the household across time



Source: Pairfam, wave 1-13, unweighted own calculations.

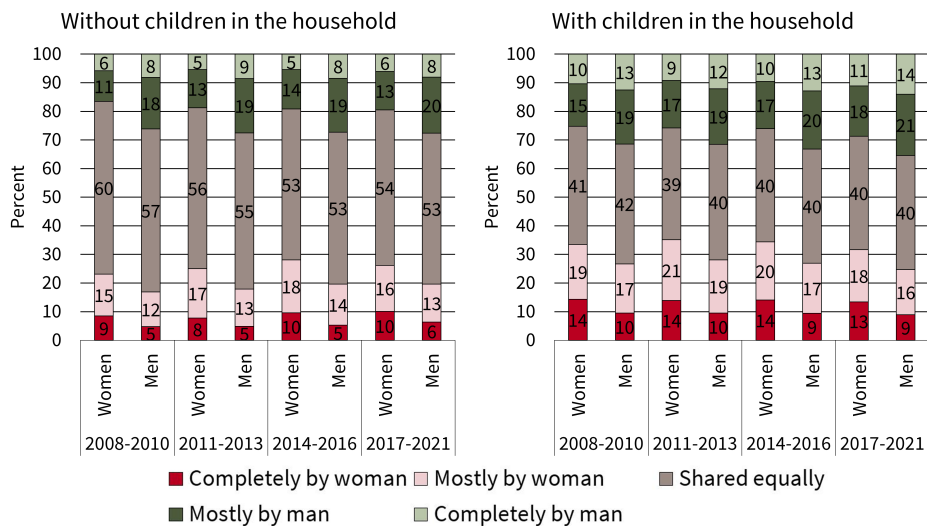
Note: The sample consists of cohabiting different-sex couples aged 20-55.

Figure A.6: The division of repairs around the house by gender of the respondent for couples with and without children aged 0-17 in the household across time



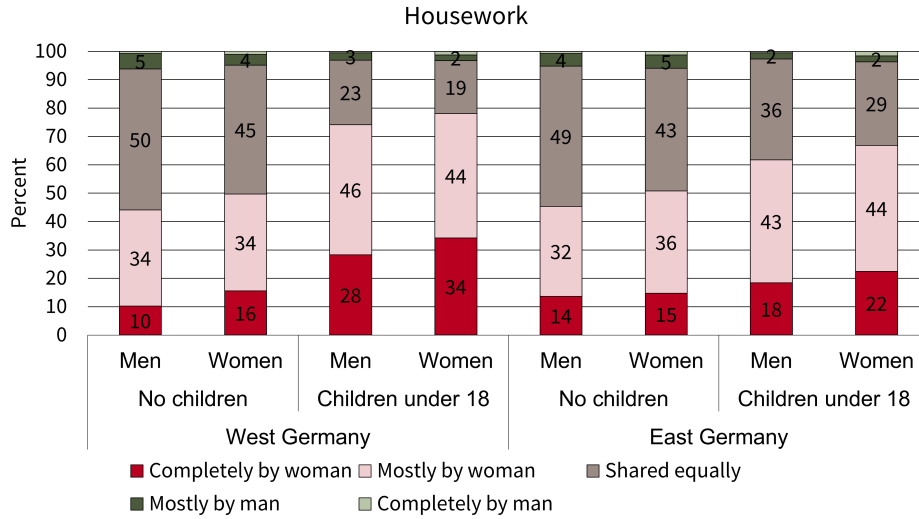
Source: Pairfam, wave 1-13, unweighted own calculations.
 Note: The sample consists of cohabiting different-sex couples aged 20-55.

Figure A.7: The division of managing the finances by gender of the respondent for couples with and without children aged 0-17 in the household across time



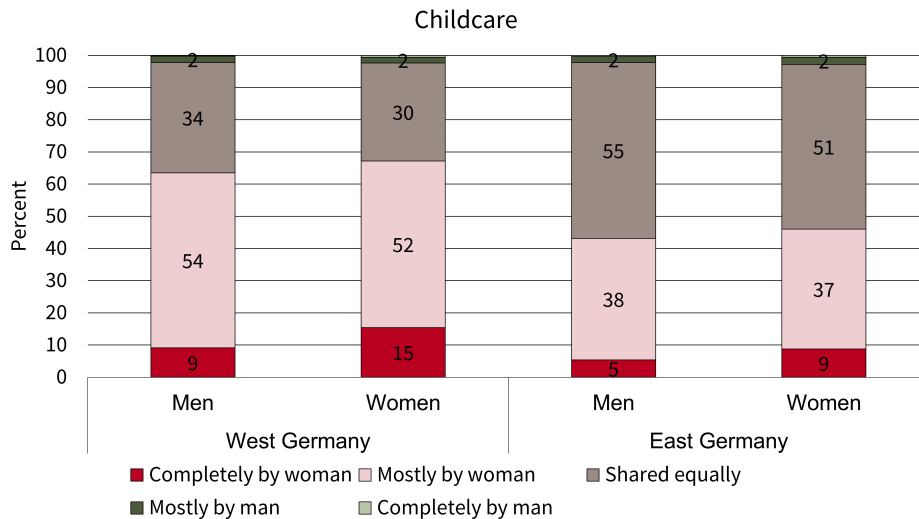
Source: Pairfam, wave 1-13, unweighted own calculations.
 Note: The sample consists of cohabiting different-sex couples aged 20-55.

Figure A.8: The division of housework by region and gender of the respondent for couples with and without children aged 0-17 in the household across time



Source: Pairfam, wave 1-13, unweighted own calculations.
 Note: The sample consists of cohabiting different-sex couples aged 20-55..

Figure A.9: The division of childcare by region and by gender of the respondent for couples with children aged 0-17 in the household across time



Source: Pairfam, wave 1-13, unweighted own calculations.
 Note: The sample consists of cohabiting different-sex couples aged 20-55.

Appendix B

Table B.1: Labor market participation and division of paid work by age of youngest child

	0-2	3-5	6-11	12-17
Individual level				
Share of working				
Women – SSC	85%	89%	82%	89%
Women – DSC	56%	74%	80%	83%
Men – DSC	92%	93%	95%	95%
Working hours				
Women – SSC	22	25	28	27
Women – DSC	8	16	17	19
Men – DSC	33	35	36	36
Couple level				
Working hours ratio				
SSC	0.44	0.56	0.61	0.63
DSC	0.31	0.44	0.46	0.49

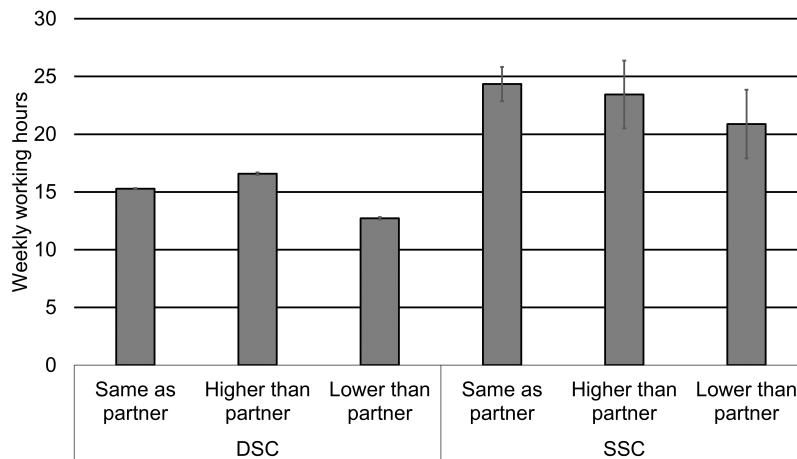
Source: Microcensus 2010-2019, own calculations.

Table B.2: Case numbers by year

Year	Different-sex couples	Same-sex couples	Total
2010	36,450	21	36,471
2011	35,828	21	35,849
2012	35,396	26	35,422
2013	34,792	41	34,833
2014	34,457	54	34,511
2015	34,511	49	34,560
2016	37,428	60	37,488
2017	38,440	58	38,498
2018	38,053	60	38,113
2019	37,837	70	37,907
Total	363,192	460	363,652

Source: Microcensus 2010-2019, own calculations.

Figure B.1: Average predicted women's working hours: Interaction educational differences and sex of partner



Source: Microcensus 2010-2019.

Note: All regressions further control for year, women's age, migration background, number of children, age of the youngest child, and region.

Table B.3: Women's actual working hours – individual perspective

	(M1)	(M2)
Different-sex couple	Ref.	Ref.
Same-sex couple	10.38*** (0.61)	7.956*** (0.62)
Cohabiting		Ref.
Married/civil union		-2.425*** (0.08)
Number of children		
1 child		Ref.
2 children		-1.649*** (0.05)
3+ children		-4.328*** (0.07)
Age of youngest child		
0-2 years		Ref.
3-5 years		8.278*** (0.07)
6-11 years		9.971*** (0.07)
12-17 years		11.85*** (0.09)
Level of education		
low		Ref.
medium		3.724*** (0.06)
high		7.011*** (0.07)
Age		0.0421*** (0.01)
West Germany		Ref.
East Germany		6.244*** (0.07)
No migration background		Ref. (.)
Migration background		-2.510*** (0.06)
Year		0.182*** (0.01)
Constant	15.08*** (0.03)	-361.4*** (16.21)
R2	0.001	0.177
N	364112	364112

Source Microcensus 2010-2019.

Note: Pooled OLS regression with robust standard errors in parentheses; results not weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table B.4: Women's labor market participation – individual perspective

	(M1)	(M2)	(M3)	(M4)
Different-sex couple	Ref.	Ref.	Ref.	Ref.
Same-sex couple	10.38*** (0.61)	7.956*** (0.62)	8.475*** (0.62)	9.060*** (0.76)
Cohabiting		Ref.	Ref.	Ref.
Married/civil union		-2.425*** (0.08)	-2.089*** (0.08)	-2.088*** (0.08)
Number of children				
1 child		Ref.	Ref.	Ref.
2 children		-1.649*** (0.05)	-1.803*** (0.05)	-1.803*** (0.05)
3+ children		-4.328*** (0.07)	-5.148*** (0.07)	-5.148*** (0.07)
Age youngest child				
0-2 years		Ref.	Ref.	Ref.
3-5 years		8.278*** (0.07)	7.717*** (0.07)	7.717*** (0.07)
6-11 years		9.971*** (0.07)	8.749*** (0.07)	8.749*** (0.07)
12-17 years		11.85*** (0.09)	9.716*** (0.09)	9.716*** (0.09)
Educational level				
Low education		Ref.		
Medium education		3.724*** (0.06)		
High education		7.011*** (0.07)		
Educational differences				
Homogamous			Ref.	Ref.
Higher than partner			1.290*** (0.06)	1.296*** (0.06)
Lower than partner			-2.564*** (0.06)	-2.561*** (0.06)
Same-sex couple × higher than partner				-2.192 (1.68)
Same-sex couple × lower than partner				-0.897 (1.70)
Women's age		0.0421*** (0.01)	0.155*** (0.00)	0.155*** (0.00)
West Germany		Ref.	Ref.	Ref.
East Germany		6.244*** (0.07)	6.874*** (0.07)	6.874*** (0.07)
No migration background		Ref.	Ref.	Ref.
Migration background		-2.510*** (0.06)	-3.246*** (0.05)	-3.245*** (0.05)
Year		0.182*** (0.01)	0.229*** (0.01)	0.229*** (0.01)
Constant	15.08*** (0.03)	-361.4*** (16.21)	-454.8*** (16.31)	-454.8*** (16.31)
R2	0.001	0.177	0.163	0.163
N	364112	364112	364112	364112

Source Microcensus 2010-2019.

Note: Pooled OLS regression with robust standard errors in parentheses; results not weighted

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table B.5: Working hours ratio – couple level

	(M1)	(M2)	(M3)
Different-sex couple	Ref.	Ref.	Ref.
Same-sex couple	0.126*** (0.02)	0.0823*** (0.02)	0.106*** (0.02)
Cohabiting		Ref.	Ref.
Married/civil union		-0.0661*** (0.00)	-0.0661*** (0.00)
Number of children			
1 child		Ref.	Ref.
2 children		-0.0306*** (0.00)	-0.0306*** (0.00)
3+ children		-0.0656*** (0.00)	-0.0656*** (0.00)
Age of youngest child			
0-2 years		Ref.	Ref.
3-5 years		0.130*** (0.00)	0.130*** (0.00)
6-11 years		0.154*** (0.00)	0.154*** (0.00)
12-17 years		0.183*** (0.00)	0.183*** (0.00)
Educational differences			
Homogamous		Ref.	Ref.
Heterogamous		-0.0233*** (0.00)	-0.0233*** (0.00)
Couples' mean age		0.000414** (0.00)	0.000415** (0.00)
Couples' absolute age difference		-0.0000202 (0.00)	-0.0000379 (0.00)
West Germany		Ref.	Ref.
East Germany		0.152*** (0.00)	0.152*** (0.00)
Same-sex couple × East Germany			-0.0870* (0.04)
Migration background			
No migration background		Ref.	Ref.
One partner migration background		-0.0111*** (0.00)	-0.0111*** (0.00)
Both partners migration background		-0.0198*** (0.00)	-0.0198*** (0.00)
Year		0.00815*** (0.00)	0.00815*** (0.00)
Constant	0.423*** (0.00)	-16.05*** (0.43)	-16.05*** (0.43)
R2	0.000	0.079	0.079
N	363652	363652	363652

Source Microcensus 2010-2019.

Note: Pooled OLS regression with robust standard errors in parentheses; results not weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table B.6: Women's labor market participation – individual perspective: separated by sex of partner

	Mothers in SSC	Mothers in DSC
Cohabiting	Ref.	Ref.
Married/civil union	-0.0182 (1.41)	-2.437*** (0.08)
Number of children		
1 child	Ref.	Ref.
2 child	2.007 (1.41)	-1.659*** (0.05)
3+ child	0.529 (1.92)	-4.335*** (0.07)
Age of youngest child		
0-2 years	Ref.	Ref.
3-5 years	3.378 (1.82)	8.298*** (0.07)
6-11 years	6.545*** (1.74)	9.995*** (0.07)
12-17 years	4.928* (2.02)	11.88*** (0.09)
Level of education		
Low	Ref.	Ref.
Medium	9.783*** (1.72)	3.713*** (0.06)
High	11.06*** (1.90)	7.007*** (0.07)
Age	0.128 (0.10)	0.0411*** (0.01)
West Germany	Ref.	Ref.
East Germany	0.416 (1.34)	6.262*** (0.07)
No migration background	Ref.	Ref.
Migration background	3.610 (1.89)	-2.517*** (0.06)
Year	-0.185 (0.23)	0.182*** (0.01)
Constant	379.6 (473.48)	-361.5*** (16.22)
R2	0.068	0.177
N	920	363,192

Source: Microcensus 2010-2019.

Note: Pooled OLS regression with robust standard errors in parentheses; results not weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table B.7: Division of paid labor – couple perspective: separated by sex of partner

	SSC	DSC
Cohabiting	Ref.	Ref.
Married/civil union	-0.0584 (0.04)	-0.0661*** (0.00)
Number of children		
1 child	Ref.	Ref.
2 children	-0.104* (0.04)	-0.0305*** (0.00)
3+ children	-0.136* (0.07)	-0.0656*** (0.00)
Age of youngest child		
0-2 years	Ref.	Ref.
3-5 years	0.120* (0.06)	0.130*** (0.00)
6-11 years	0.157** (0.05)	0.154*** (0.00)
12-17 years	0.194** (0.06)	0.183*** (0.00)
Educational differences		
Homogamous	Ref.	Ref.
Heterogamous	-0.0702* (0.04)	-0.0233*** (0.00)
Couples' mean age	-0.00299 (0.00)	0.000422*** (0.00)
Couples' age differences	0.00152 (0.01)	-0.0000239 (0.00)
West Germany	Ref.	Ref.
East Germany	0.0393 (0.04)	0.152*** (0.00)
Migration background		
No migration background	Ref.	Ref.
One partner migration background	-0.0576 (0.06)	-0.0110*** (0.00)
Both partners migration background	-0.0750 (0.08)	-0.0198*** (0.00)
Year	0.00845 (0.01)	0.00815*** (0.00)
Constant	-16.39 (15.06)	-16.05*** (0.43)
R2	0.089	0.079
N	460	363,192

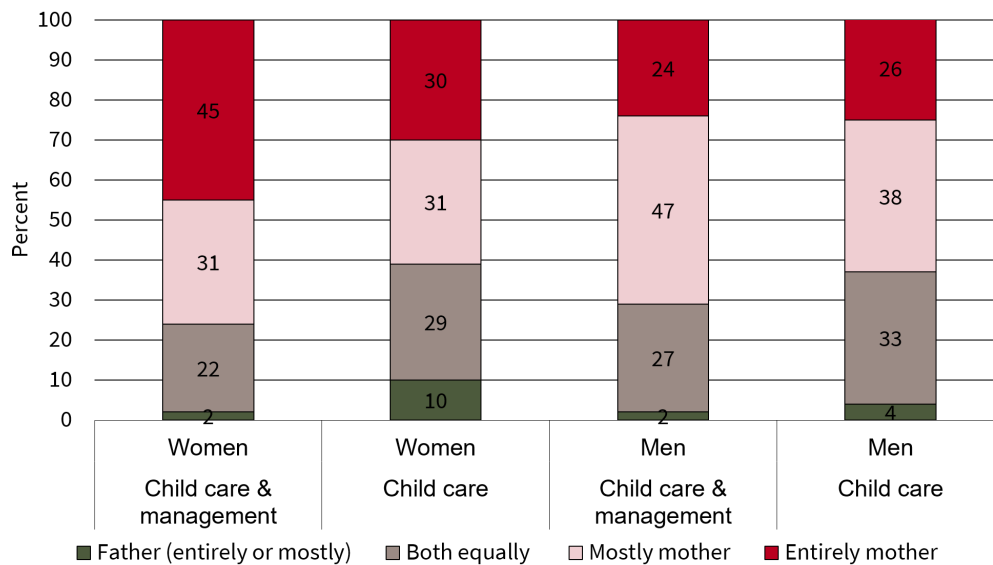
Source: Microcensus 2010-2019.

Note: Pooled OLS regression with robust standard errors in parentheses; results not weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix C

Figure C.1: The division of childcare **before** the coronavirus crisis.

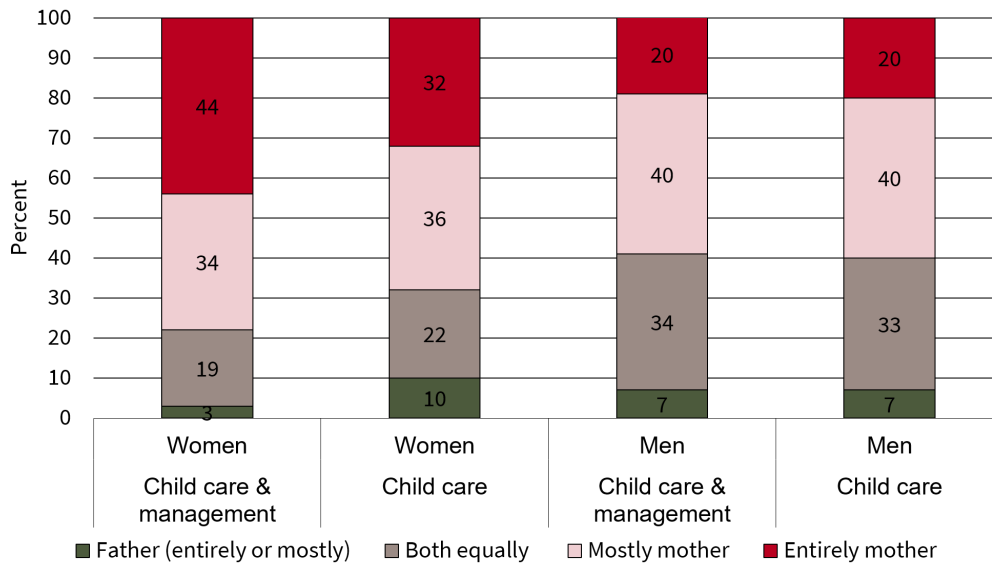


Note: Note: The wording in German of the “childcare” item is as follows: Wenn Sie an die Zeit vor der Corona-Krise denken: Wie haben Sie die Kinderbetreuung organisiert? Hier geht es um die Zeit, in der die Kinder nicht in der Schule, im Kindergarten etc. betreut wurden, sondern durch Sie und/ oder eine andere Person (z.B. anderer Elternteil, Großeltern).

The wording in German of the “childcare & management” item is as follows: Und wie teilen Sie und Ihr Partner/Ihre Partnerin sich die Arbeit aktuell auf? Kinderbetreuung/-management (Schulaufgaben, Hobbys, Verabredungen, Geburtstagsgeschenke, Kleidung)? (fast) vollständig Partner/in; überwiegend Partner/in; etwa halb/halb; überwiegend ich; (fast) vollständig ich; trifft nicht zu“.

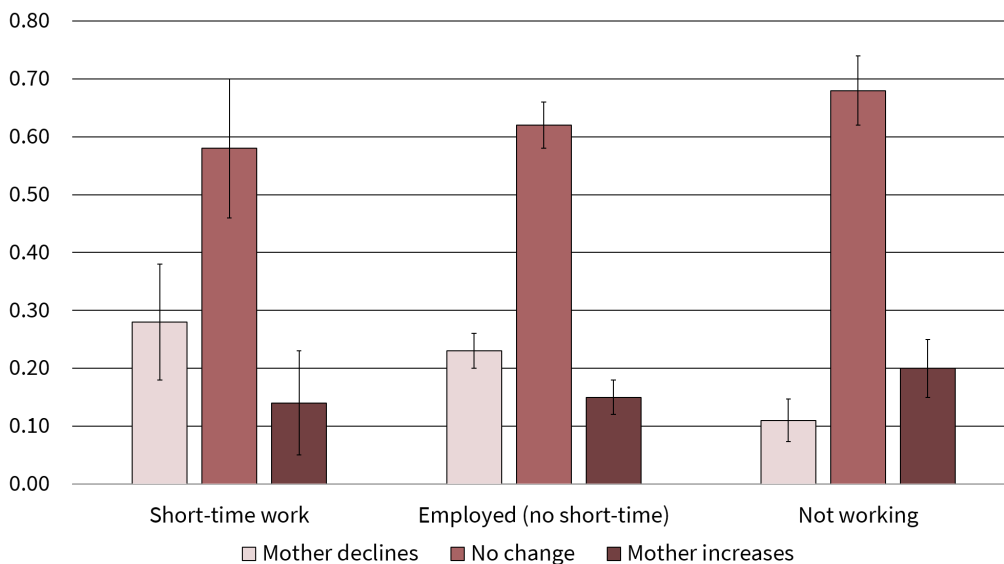
Source: IAB-HOPP waves 2, own weighted estimates.

Figure C.2: The division of childcare **during** the coronavirus crisis.



Note: See Figure C.1
 Source: IAB-HOPP waves 2-7, own weighted estimates.

Figure C.3: Average predicted probabilities from multinomial regression model, female sample



Note: Further control variables are education, migration background, age of the youngest child, region (East/West), partner's employment status, interview month.
 Source: IAB-HOPP waves 2-5, own estimations

Table C.1: Regression results. Male sample. Multinomial regression model. Average marginal effects, z-statistic in parenthesis. Dependent variable: Decline in father's engagement (base outcome), no change, increase in father's engagement.

	Decline	No Change	Increase
Employment status			
Employed, no short-time work	Ref.	Ref.	Ref.
Employed, short-time work	-0.069*** (-2.66)	-0.033 (-0.71)	0.102** (2.31)
Not working	-0.004 (-0.08)	-0.028 (-0.42)	0.032 (0.54)
Educational status			
Low or medium education	Ref.	Ref.	Ref.
High education	-0.024 (-0.98)	-0.012 (-0.36)	0.036 (1.20)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.042 (-1.31)	0.049 (1.13)	-0.007 (-0.18)
Age of the youngest child	-0.003 (-1.00)	0.005 (1.18)	-0.002 (-0.54)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	-0.022 (-0.61)	-0.003 (-0.06)	0.025 (0.58)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.027 (-0.91)	0.055 (1.32)	-0.028 (-0.76)
Interview month	0.035*** (3.43)	-0.038*** (-2.63)	0.003 (0.25)
Person-months	822	822	822

Source IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.2: Exclusion of fathers who did care work “completely” before Corona

Dependent variable:	Decline of fathers’ engagement (base outcome), no change, increase of fathers’ engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Males only, exclusion of fathers doing care work “completely” before Corona		
	Decline	No change	Increase
Employment status			
Employed, no short-time work	Ref.	Ref.	Ref.
Employed, short-time work	-0.066** (-2.53)	-0.032 (-0.70)	0.099** (2.24)
Not working	-0.064 (-1.59)	0.009 (0.13)	0.056 (0.85)
Educational status			
Low or medium education	Ref.	Ref.	Ref.
High education	-0.016 (-0.65)	-0.014 (-0.41)	0.030 (0.97)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.036 (-1.16)	0.047 (1.09)	-0.011 (-0.28)
Age of the youngest child			
	-0.005 (-1.42)	0.007 (1.44)	-0.002 (-0.51)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	-0.015 (-0.43)	-0.006 (-0.12)	0.021 (0.48)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.015 (-0.50)	0.046 (1.10)	-0.031 (-0.84)
Interview month			
	0.034*** (3.38)	-0.038*** (-2.62)	0.004 (0.29)
N (person-months)	811	811	811

Source IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.3: Including “division of care before Corona” as additional covariate

Dependent variable:	Decline of fathers’ engagement (base outcome), no change, increase of fathers’ engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Males only		
Division of childcare	Decline	No change	Increase
Childcare before corona			
Entirely mother	Ref.	Ref.	Ref.
Mostly mother	0.119*** (6.53)	0.176*** (3.32)	-0.295*** (-6.09)
50/50 or mostly/entirely father	0.265*** (10.69)	0.226*** (4.95)	-0.492*** (-12.36)
Employment status			
Employed, no short-time work	Ref.	Ref.	Ref.
Employed, short-time work	-0.054* (-1.93)	-0.021 (-0.48)	0.075* (1.91)
Not working	-0.040 (-1.02)	-0.044 (-0.66)	0.084 (1.37)
Educational status			
Low or medium education	Ref.	Ref.	Ref.
High education	-0.028 (-1.21)	-0.018 (-0.53)	0.046* (1.65)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.055* (-1.87)	0.032 (0.72)	0.024 (0.66)
Age of the youngest child			
	-0.002 (-0.53)	0.005 (1.15)	-0.004 (-0.95)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	-0.029 (-0.82)	0.006 (0.12)	0.022 (0.53)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.089*** (-2.98)	0.018 (0.41)	0.071** (2.00)
Interview month			
	0.037*** (3.94)	-0.036** (-2.55)	-0.001 (-0.09)
N (person-months)	822	822	822

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.4: The role of home-office for fathers

Dependent variable:	Decline of fathers' engagement (base outcome), no change, increase of fathers' engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Employed males only		
	Decline	No change	Increase
Short-time work			
No	Ref.	Ref.	Ref.
Yes	-0.055* (-1.71)	-0.085 (-1.37)	0.140** (2.28)
Home office			
No	Ref.	Ref.	Ref.
Yes	-0.066* (-1.81)	0.001 (0.03)	0.064 (1.46)
Educational status			
Low or medium education	Ref.	Ref.	Ref.
High education	0.009 (0.28)	-0.019 (-0.39)	0.010 (0.23)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.047 (-1.24)	0.078 (1.46)	-0.031 (-0.64)
Age of the youngest child			
	-0.004 (-1.06)	0.004 (0.65)	0.000 (0.01)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	-0.081 (-1.48)	0.056 (0.83)	0.025 (0.43)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.004 (-0.13)	0.020 (0.39)	-0.016 (-0.33)
Interview month			
	0.013 (1.13)	-0.021 (-1.14)	0.008 (0.48)
N (person-months)	520	520	520

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.5: Main model for the female sample

Dependent variable:	Decline of mothers' engagement (base outcome), no change, increase of mothers' engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Females only		
	Decline	No change	Increase
Employment status			
Employed, no short-time work	Ref.	Ref.	Ref.
Employed, short-time work	0.053 (0.91)	-0.039 (-0.61)	-0.013 (-0.30)
Not working	-0.119*** (-4.29)	0.064* (1.66)	0.055* (1.69)
Educational status			
Low or Medium education	Ref.	Ref.	Ref.
High education	-0.013 (-0.47)	0.024 (0.72)	-0.011 (-0.44)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.025 (-0.72)	0.039 (0.94)	-0.014 (-0.45)
Age of the youngest child			
	-0.006 (-1.54)	0.002 (0.52)	0.004 (0.99)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	0.077** (2.39)	0.006 (0.12)	-0.083** (-1.99)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.100* (-1.74)	-0.085 (-0.88)	0.185* (1.91)
Interview month			
	-0.026** (-2.27)	-0.007 (-0.52)	0.033*** (3.38)
N (person-months)	925	925	925

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.6: Exclusion of mothers who did care work “completely” before Corona

Dependent variable:	Decline of mothers’ engagement (base outcome), no change, increase of mothers’ engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Females only, exclusion of mothers doing care work “completely” before Corona		
	Decline	No change	Increase
Employment status			
Employed, no short-time work	Ref.	Ref.	Ref.
Employed, short-time work	0.015 (0.23)	-0.047 (-0.50)	0.032 (0.39)
Not working	-0.104*** (-3.23)	-0.048 (-0.88)	0.152*** (2.86)
Educational status			
Low or Medium education			
High education	0.019 (0.60)	0.024 (0.53)	-0.043 (-1.08)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	0.027 (0.74)	0.019 (0.36)	-0.046 (-0.93)
Age of the youngest child	-0.008* (-1.73)	0.001 (0.18)	0.007 (1.32)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	0.105*** (2.94)	0.023 (0.35)	-0.128** (-1.99)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.191*** (-4.05)	-0.122 (-0.91)	0.313** (2.27)
Interview month	-0.024* (-1.74)	-0.039** (-2.08)	0.063*** (4.07)
N (person-months)	515	515	515

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.7: Including “division of care before Corona” as additional covariate

Dependent variable:	Decline of mothers’ engagement (base outcome), no change, increase of mothers’ engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Females only		
	Decline	No change	Increase
Division of care pre-Corona			
Entirely mother	Ref.	Ref.	Ref.
Mostly mother	-0.123*** (-4.27)	-0.154*** (-4.50)	0.277*** (12.42)
50/50 or mostly/entirely father	-0.167*** (-5.26)	-0.192*** (-4.31)	0.360*** (9.53)
Employment status			
Employed, no short-time work			
Employed, short-time work	0.035 (0.65)	-0.058 (-0.90)	0.023 (0.53)
Not working	-0.130*** (-4.78)	0.043 (1.14)	0.087*** (2.93)
Educational status			
Low or medium education	Ref.	Ref.	Ref.
High education	-0.011 (-0.40)	0.035 (1.09)	-0.025 (-1.13)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.016 (-0.49)	0.046 (1.16)	-0.030 (-1.06)
Age of the youngest child	-0.007 (-1.62)	0.002 (0.52)	0.004 (1.33)
Migration background			
No migration background			
Migration background	0.072** (2.26)	0.001 (0.03)	-0.074** (-2.07)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.108* (-1.79)	-0.096 (-1.11)	0.204*** (2.71)
Interview month	-0.027** (-2.41)	-0.009 (-0.65)	0.036*** (4.18)
N (person-months)	925	925	925

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.8: The role of home office for mothers

Dependent variable:	Decline of mothers' engagement (base outcome), no change, increase of mothers' engagement.		
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses		
Sample:	Employed females only		
	Decline	No change	Increase
Short-time work			
No	Ref.	Ref.	Ref.
Yes	0.023 (0.37)	-0.016 (-0.22)	-0.006 (-0.12)
Home office			
No	Ref.	Ref.	Ref.
Yes	0.015 (0.31)	-0.040 (-0.71)	0.026 (0.65)
Educational status			
Low or medium education	Ref.	Ref.	Ref.
High education	-0.066* (-1.67)	0.034 (0.67)	0.032 (0.83)
Region			
Western Germany	Ref.	Ref.	Ref.
Eastern Germany	-0.016 (-0.35)	0.077 (1.41)	-0.061 (-1.55)
Age of the youngest child			
	-0.004 (-0.63)	0.001 (0.17)	0.003 (0.54)
Migration background			
No migration background	Ref.	Ref.	Ref.
Migration background	0.169*** (4.05)	-0.039 (-0.57)	-0.130** (-2.17)
Employment status partner			
Not working	Ref.	Ref.	Ref.
Working	-0.619*** (-7.36)	-1.233*** (-6.92)	1.852*** (9.89)
Interview month			
	-0.021 (-1.29)	-0.006 (-0.29)	0.027* (1.87)
N (person-months)	426	426	426

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.9: Determinants of the division of care **before** Corona, father sample

Dependent variable:	Care patterns before Corona. Entirely mother (base outcome), mostly mother, 50/50 and father contribute mostly or entirely			
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses			
Sample:	Males only			
	Entirely mother	Mostly mother	50/50 or mostly/entirely father	
Educational status				
Low or medium education	Ref.	Ref.	Ref.	
High education	-0.023 (-0.57)	0.031 (0.57)	-0.008 (-0.16)	
Region				
Western Germany	Ref.	Ref.	Ref.	
Eastern Germany	-0.104 (-1.64)	0.033 (0.46)	0.072 (1.17)	
Age of the youngest child	0.001 (0.24)	-0.005 (-0.66)	0.004 (0.50)	
Migration background				
No migration background	Ref.	Ref.	Ref.	
Migration background	-0.014 (-0.23)	-0.010 (-0.13)	0.024 (0.31)	
Employment status partner				
Not working	Ref.	Ref.	Ref.	
Working	-0.178*** (-4.15)	0.067 (0.93)	0.111 (1.61)	
N	333	333	333	

Source: IAB-HOPP waves 2, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.10: Determinants of the division of care **before** Corona, mother sample

Dependent variable:	Care patterns before Corona. Entirely mother (base outcome), mostly mother, 50/50 and father contribute mostly or entirely			
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses			
Sample:	Females only			
	Entirely mother	Mostly mother	50/50 or mostly/entirely father	
Educational status				
Low or medium education	Ref.	Ref.	Ref.	
High education	0.011 (0.20)	-0.003 (-0.05)	-0.008 (-0.18)	
Region				
Western Germany	Ref.	Ref.	Ref.	
Eastern Germany	-0.056 (-0.87)	-0.005 (-0.08)	0.061 (1.26)	
Age of the youngest child	-0.002 (-0.29)	0.001 (0.09)	0.001 (0.26)	
Migration background				
No migration background	Ref.	Ref.	Ref.	
Migration background	0.014 (0.19)	-0.024 (-0.34)	0.010 (0.17)	
Employment status partner				
Not working	Ref.	Ref.	Ref.	
Working	0.031 (0.21)	0.036 (0.24)	-0.067 (-0.61)	
N	357	357	357	

Source: IAB-HOPP wave 2, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.11: Determinants of the division of care **during** Corona, father sample

Dependent variable:	Care patterns before Corona. Entirely mother (base outcome), mostly mother, 50/50 and father contribute mostly or entirely			
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses			
Sample:	Males only			
	Entirely mother	Mostly mother	50/50	or mostly/entirely father
Educational status				
Low or medium education	Ref.	Ref.	Ref.	
High education	-0.062** (-2.55)	0.024 (0.69)	0.038 (1.12)	
Region				
Western Germany	Ref.	Ref.	Ref.	
Eastern Germany	-0.029 (-0.87)	-0.048 (-1.10)	0.077* (1.87)	
Age of the youngest child				
	0.003 (0.75)	-0.001 (-0.13)	-0.002 (-0.41)	
Migration background				
No migration background	Ref.	Ref.	Ref.	
Migration background	-0.021 (-0.58)	0.006 (0.13)	0.014 (0.29)	
Employment status partner				
Not working	Ref.	Ref.	Ref.	
Working	-0.171*** (-6.50)	0.035 (0.80)	0.135*** (3.06)	
Interview month				
	-0.002 (-0.15)	0.048*** (3.23)	-0.046*** (-3.18)	
N (person-months)	822	822	822	

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.12: Determinants of the division of care **during** Corona, mother sample

Dependent variable:	Care patterns before Corona. Entirely mother (base outcome), mostly mother, 50/50 and father contribute mostly or entirely			
Method:	Multinomial regression model. Average marginal effects; z-statistic in parentheses			
Sample:	Females only			
	Entirely mother	Mostly mother	50/50 mostly/entirely father	or
Educational status				
Low or medium education	Ref.	Ref.	Ref.	
High education	-0.036 (-1.09)	0.006 (0.19)	0.030 (1.07)	
Region				
Western Germany	Ref.	Ref.	Ref.	
Eastern Germany	-0.058 (-1.41)	-0.016 (-0.40)	0.074** (2.32)	
Age of the youngest child				
	-0.004 (-0.90)	0.004 (0.98)	-0.000 (-0.02)	
Migration background				
No migration background	Ref.	Ref.	Ref.	
Migration background	-0.080* (-1.69)	0.012 (0.28)	0.068* (1.82)	
Employment status partner				
Not working	Ref.	Ref.	Ref.	
Working	0.090 (0.97)	0.133 (1.45)	-0.223*** (-3.98)	
Interview month				
	0.043*** (3.08)	-0.011 (-0.83)	-0.031** (-2.55)	
N (person-months)	925	925	925	

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C.13: Determinants of short-time work: Cross-tabulation employment status by socio-demographic characteristics, row %

	Short-time work	Employed (no short-time work)	Not working
Region			
Western Germany	13	60	27
Eastern Germany	8	80	12
Migration background			
No migration background	12	62	26
Migration background	11	71	18
Level of education			
Low or medium education	14	58	28
High education	8	72	20
Employment status partner			
Not working	17	66	17
Working	11	63	26
Person-waves	217	1,387	355

Source: IAB-HOPP wave 2-5, own weighted estimates.

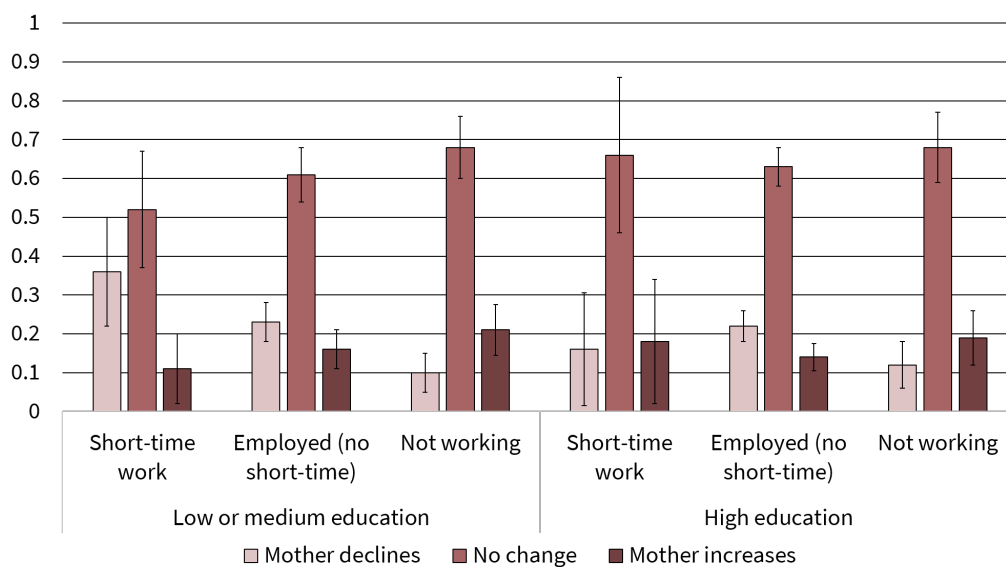
Table C.14: Determinants of short-time work: Logit model

Dependent variable:	Short-time work (yes: 1, no: 0)	
Method:	Binary logistic regression. Average marginal effects; z-statistic in parentheses	
Sample:	Male and female sample	
	Men	Women
Educational status		
Low or medium education	0.229	0.141
High education	0.135	0.065
Region		
Western Germany	0.188	0.105
Eastern Germany	0.128	0.076
Migration background		
No migration background	0.179	0.087
Migration background	0.155	0.156

Source: IAB-HOPP waves 2-5, own estimations.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure C.4: Average predicted probabilities from multinomial regression model separated by educational status, female sample



Note: Further control variables are education, migration background, age of the youngest child, region (East/West), partner's employment status, interview month.

Source: IAB-HOPP waves 2-5, own estimations

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Datasets

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List of Papers

This cumulative dissertation includes a general introduction (Chapter 1) and three research papers (Chapters 2, 3, and 4).

Chapter 2: The division of paid labor: A Study of female same-sex and different-sex parents in Germany

- single-authored
- It is currently under review in a scientific journal.

Chapter 3: The division of childcare during the coronavirus crisis in Germany: How did short-time work affect fathers' engagement?

- co-authored with Michaela Kreyenfeld and Sandra Dummert.
- The paper is published as a journal article: Naujoks, T., Kreyenfeld, M., & Dummert, S. (2022). The division of child care during the coronavirus crisis in Germany: How did short-time work affect fathers' engagement? *Journal of Family Research*, 34(1), 67-98.
- The paper is published as a pre-print: Naujoks, T., Kreyenfeld, M., & Dummert, S. (2021). The Coronavirus Crisis, Fathers' Short-Time Work, and the Division of Child Care in Couples. Working Paper. Hertie School.
<https://doi.org/10.48462/opus4-3870>

Chapter 4: The division of housework and childcare from a dyadic perspective: Discrepancies between partners' reports across the transition to parenthood

- single-authored
- It is currently under review (revise & resubmit) in a scientific journal.