Work-Hour Mismatches among Mothers and Fathers in Germany: A Dynamic Analysis of Post-Birth Employment Trajectories

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Background

Employment is a central aspect in the life of many working-age individuals. Experiencing a mismatch between preferred working hours and actual work hours—both in terms working less or more than desired—is associated with losses in well-being (Wooden et al., 2009). A literature review shows that these mismatches result from complex interactions of actual employment hours, individual and household characteristics (e.g., gender, care responsibilities), and the country context (Antal et al., 2024). Mapping the longitudinal dynamic of work hour mismatches is essential—not only for its impact on individual well-being but also for its implications for policy efficacy. Recent family policies, such as the extension of public childcare options, which many European countries implemented to reduce mothers' care responsibilities and to facilitate their employment (European Commission, 2022; OECD, 2024) might be less effective if they do not reflect parents' work-hour preferences.

Although women's educational attainment and their employment rates have increased over the last decades, women are still underrepresented on the labor market, with the gender employment gap amounting to 10.8 percentage points in 2021 (European Commission, 2025). Over the life course, care responsibilities impact the (full) labor force participation of women (Brehm, 2019), while in many societies men mostly display stable full-time employment over their entire adult life (Madero-Cabib & Fasang, 2016).

A recent study highlights that the preferred working-care arrangements of mothers and fathers with young children would be more equally divided compared to what they achieve in reality, i.e., mothers would like to work more and fathers would like to work less (Gambaro et al., 2024). However, most of the literature adopting a life-course perspective investigated employment of women and men or mothers and fathers but focused less on the temporal dynamics of work hour mismatches over time as children grow older and care responsibility reduces.

To address this research gap, we pose two research questions: 1) What longitudinal patterns of mismatches emerge between actual working hours and work hour preferences after childbirth? 2) How do these pattern associate with individual, household, and regional-level characteristics?

By using multichannel sequence analysis and relying on detailed measures of actual employment and work hours preferences, the results of this study will help us to understand

under which circumstances parents are able to align their employment with their preferences and if the current status quo in Germany of a modernized male breadwinner/female secondary earner model reflects parents (longer-term) preferences.

Empirical approach

We use the German Socio-Economic Panel (SOEP, v40, 2008-2023): as Germany started to extend early childcare in 2008 and reformed their parental leave policy in 2007, the analysis will be restricted to the years 2008 and onwards. The sample includes 384 couples of parents, whose individual actual and preferred employment trajectories we can follow for four years after the birth of their first child.

First, multichannel sequence and fuzzy clustering analysis will be used to identify patterns of employment/work hour preferences for mothers and fathers separately. Fuzzy clustering has the advantage of identifying the degree of the membership of each case to all clusters, thus avoiding crisp cluster membership, which can be considered as problematic when heterogeneity is high within clusters (Piccarreta & Struffolino, 2024). Second, Dirichlet regression will be used to link these patterns to individual and contextual characteristics.

The first sequence channel is represented by the yearly actual main employment trajectory, where each year is coded as being either in inactivity[1] (i.e., unemployed, out of labor, or maternity leave), small part-time (<20 hours per week), large part-time (20 to < 35 hours per week), or full-time jobs (35 and more hours per week). The second sequence channel is represented by the size and direction of the mismatch between actual and preferred working hours: in this case each time point is coded as either underemployment (preferred work hours are at least 3 more than actual), match (difference between preferred and actual work hours smaller than 3 hours), or overemployment (preferred work hours are at least 3 less than actual).

Preliminary descriptive results

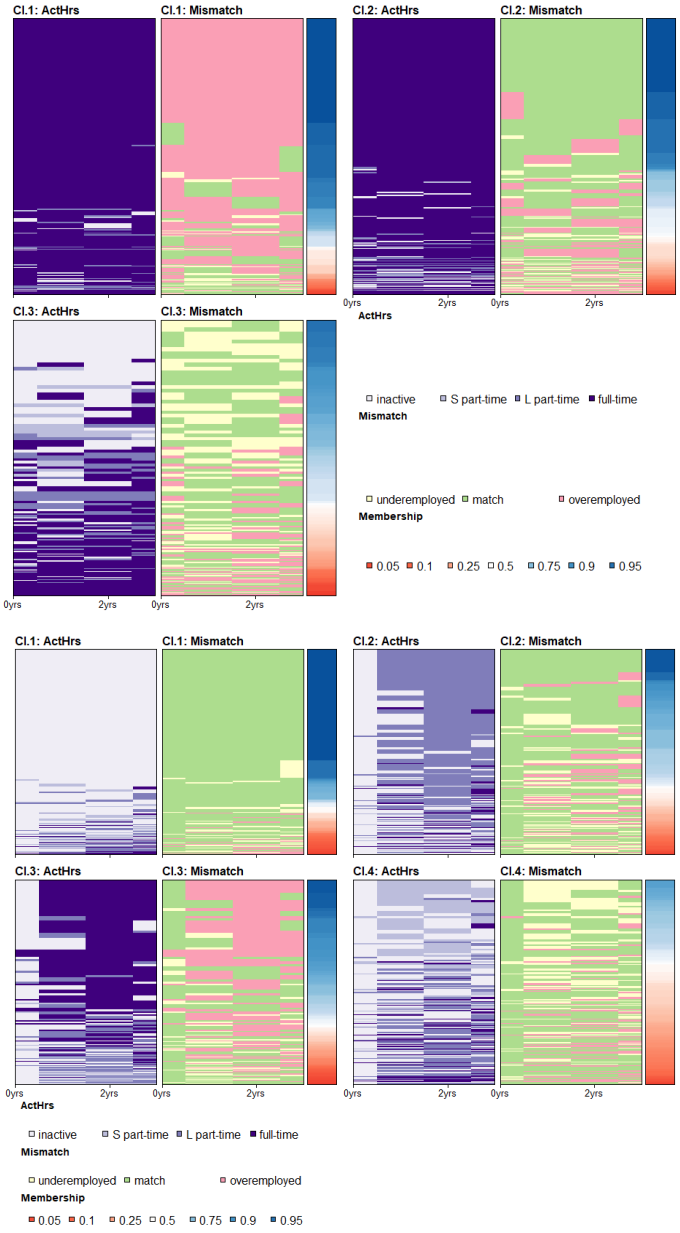
Figure 1 shows the gradient index plot for the fuzzy cluster solutions of fathers (top) and mothers (bottom). Each clusters depicts one plot for each sequence channel (left actual work hours, right mismatch between actual and preferred working hours) along with the gradient bar which illustrates the degrees of membership of each of the 384 mothers and fathers to each cluster.

The clusters reveal more stability over the child's age in actual employment and work hour (mis)match among fathers than mothers. Among fathers who are continuously full-time

[1] Inactive individuals are asked if they would like to work again, and if yes, how soon. We code all inactive individuals as underemployed if they indicate that they want to work again "as soon as possible".

employed, some are consistently satisfied with their employment situation (high membership degree in cluster 2), while others feel consistently overemployed (high membership degree in cluster 1). Volatility is visible only for fathers with a high membership degree in cluster 3, depicting fathers who experience continuous inactivity or career instability and who feel underemployed, though not consistently.

Figure 1: Weighted gradient index plots for the fuzzy clusters of fathers' (top) and mothers' (bottom) post-birth actual employment and work hours mismatch trajectories



Source: SOEP (2008-2023), own calculations.
Note: We used Optimal Matching with indel costs of 1 and substitution costs derived from transition probabilities. Fuzziness parameter r = 1.3. Average density-based and the average generalized silhouette coefficients were used to choose the appropriate number of clusters.

Among mothers, stability is only visible for those with a high membership degree in cluster 1, with those mothers being consistently out of the labor market and satisfied with this situation. While most mothers are inactive right after giving birth and satisfied with this, mismatches emerge for mothers with a high membership degree in the other clusters one year after giving birth. Next to cluster 1, mothers at the core of cluster 2, who start large part-time work when their children are aged 1, display the most work hour matches, though not as consistently as in the core of cluster 1. In contrast, mothers at the core of cluster 3, who return to full-time work after a year of maternity leave, feel mostly overemployed. Lastly, mothers at the core of cluster 4, who take up small part-time jobs after maternity leave, feel mostly underemployed.

Next steps

We will run Dirichlet regressions to relate demographic and contextual information (education, household structure, regional childcare availability) to the fuzzy pattens of employment/mismatch. This will reveal which groups of parents are more likely to experience work hour mismatches and which parents are more likely to realize their preferences. Moreover, we will extend the analysis by including data from Switzerland (Swiss Household Panel, 2005-2023). This will allow us to compare work hour mismatches in two country contexts with similar gender norms but important differences in the affordability of public childcare and parental leave policies. Thus, we can contribute to the understanding of how the policy context shapes opportunities and constraints under which individuals' life-courses unfold.

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