

## **Regional Differences in Childcare Availability and Employment Trajectories around First Childbirth in East and West Germany, 1990-2021**

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### **Extended Abstract**

Focusing on a period of extensive increases in childcare availability, we investigate differences in employment trajectories around first childbirth in East and West Germany over time.

Even several decades after German reunification attitudes and behaviors concerning labor market participation of women still differ on average between those living in East and West Germany, especially regarding employment of mothers with young children (Matysiak and Steinmetz, 2008; Zoch, 2021). During the division of Germany, universal public childcare facilitated full-time female employment in the German Democratic Republic (GDR, East Germany), while the male breadwinner/female homemaker model entailing low levels of female part-time employment was dominant in the Federal Republic of Germany (FRG, West Germany, Huinink and Mayer, 1995; Rosenfeld et al., 2004).

After reunification in 1990 regional variation in public provision of early childcare remains high (Schober, 2020). Specifically, in West Germany 8,1% of children under three years old attended public childcare in 2007, while this is true for 37,4% children in East Germany (Federal Statistical Office, 2008). A widespread extension of public childcare provision for under-threes which was brought on its way in 2007 by the German government aimed to reduce this regional gap and to ensure that by 2013 35% of under-threes had a public low-cost daycare spot. Since the reform's implementation in 2008, the provision of early childcare has gradually increased in most German states, and while the increase is stronger in West German states (Zimmert, 2023) a gap in childcare coverage between East (51,5%) and West Germany (29,4%) still remains even in 2018 (Federal Statistical Office, 2019).

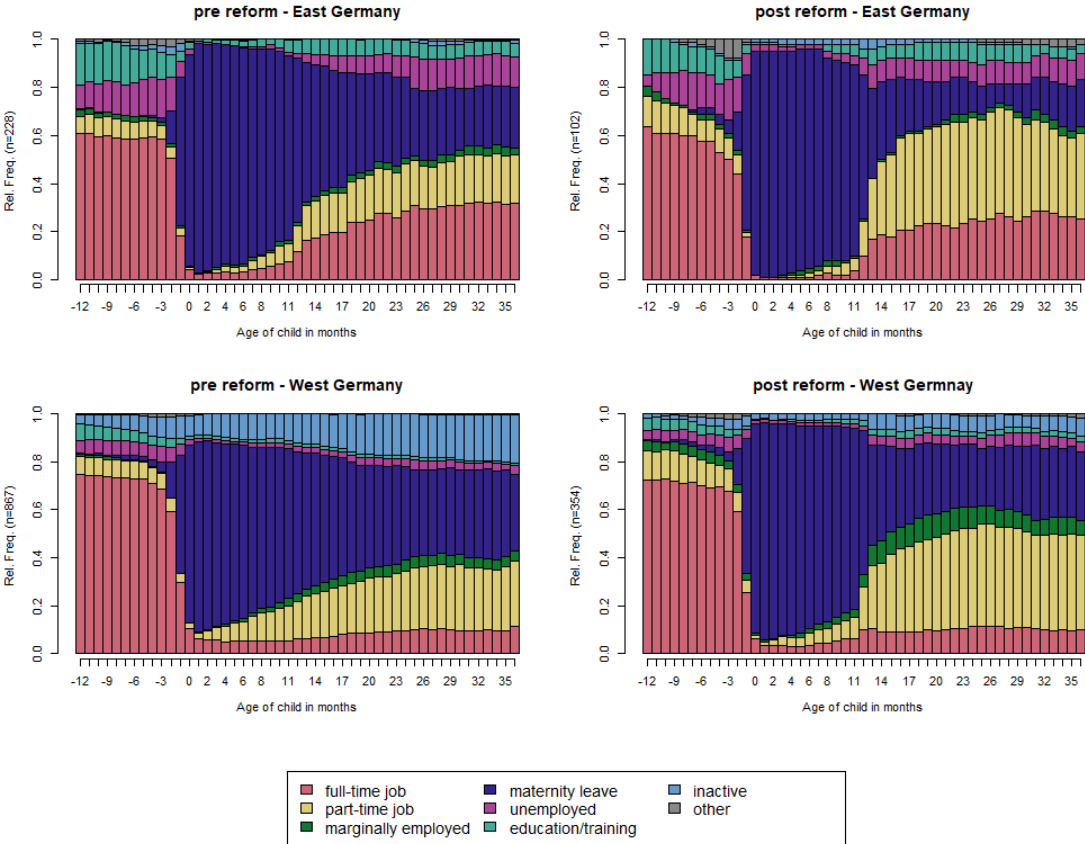
Against the background of this large-scale childcare reform this study wants to address three research questions. First, we want to reveal if differences in employment trajectories around first childbirth between East and West Germany have reduced over the years. Second, we want to investigate for both pre- and post-reform periods, the differences in employment trajectories in terms of labor market engagement of East and West German mothers. Lastly, we want to uncover what role region (East vs. West) and period (pre- vs. post-reform) play in explaining differences between mothers' employment trajectories around childbirth and if other micro-level individual-related factors such as education, previous work experience, or partnership status are more important for explaining differences.

Previous studies show differences in employment trajectories across the life course between East and West German women, which however grow weaker for younger cohorts (Liao and Fasang, 2021; Nutz and Lersch, 2021). We build on these studies by focusing on mothers' employment trajectories around first childbirth and by comparing mothers who gave birth before and after the reform. With this approach we extend previous research that looked at how regional differences in childcare provision are linked to labor market behavior of mothers of young children (Kreyenfeld and Hank, 2000; Zoch, 2020).

While the studies mentioned above provided valuable insights into the relationship between public childcare provision and mothers employment, they have thus far mainly adopted a static approach measuring mothers labor market behavior at one specific point in time. Hence, we know little about regional differences in longer-term and dynamic labor market behavior of mothers after giving birth. By looking at monthly employment sequences of mothers while their first child is below three, we contribute to the literature by offering descriptive findings on differences and changes of mothers' longer-term and dynamic employment behavior in East and West Germany before and after the childcare reform.

We use data from the German Socio-Economic Panel (SOEP), including all SOEP waves collected after German reunification starting from 1990 until the most recent one available (i.e., 2021) (Goebel et al., 2023). By relying on fertility biographies as well as (retrospective) employment spell data, we create monthly employment sequences of mothers until their first child turns three. As we are interested in differences in labor market attachment around childbirth, our observation window spans 49 months in total: 12 pre-birth months + month of giving birth + 36 post-birth months. With this sample restriction, we can include 1,551 mothers. Figure 1 presents the state distribution plots for the employment trajectories around first childbirth of mothers giving birth in either East or West Germany and before or after the reform respectively.

Figure 1: State distribution plots for mothers' employment trajectories around first childbirth



Source: SOEP (v38, 1990 – 2021), own calculations.

To address our three research questions, we employ three separate measures developed in the field of sequence analysis to investigate discrepancies (i.e., differences) between (groups of) sequences.

First, to investigate if differences in employment sequences between East and West German mothers decreased for those giving birth after the reform was implemented, we utilize adapted versions of the Bayesian information criterion (BIC) and the likelihood-ratio test (LRT) (Liao and Fasang, 2021). While the LRT allows to assess the statistical significance of differences between groups of sequences, the BIC allows to assess their substantive significance.

Second, in order to reveal in what substantive aspects and when (along the employment trajectories) the four groups of sequences we focus on differ, we utilize implicative statistics (Struffolino et al., 2016; Studer, 2015). This approach adopts the framework of “sequence of typical states”. In a series of graphs that account for pairwise comparisons between our four subsamples (i.e., mothers in East and West Germany before and after the reform) the typical state for each time point of the sequence (i.e., 12 months before giving birth to 36 months after birth) is displayed.

Finally, we want to know what variables besides region (East vs. West) or period (pre- vs. post-reform) might be (more) important for explaining discrepancies between mothers’ employment sequences around first childbirth (third research question). To this end we use the regression tree method as proposed by Studer et al. (2011), which reveals the covariates most important to distinguish mothers’ employment sequences, i.e., the variables explaining most of the discrepancies between them.

In sum, results from these three analytical steps show, first, that for mothers giving birth before the reform, differences in employment trajectories between those living in East and West Germany are both statistically significant (LRT) and strongly meaningful (BIC). Interestingly, these differences pertain to the timing and duration of sequences states, but not to their order. Second, implicative statistics for analyzing sequences of typical states reveal that in both time periods, inactivity post birth is more prevalent for West German mothers, while full-time employment is more prevalent in the East. Although, these differences are overall not as highly significant as before the reform. Lastly, a sequence regression tree pooling all sequences shows that pre-birth working status is most important for explaining sequence discrepancies. However, for mothers not working before giving birth region is the second most important variable, while for those who were working it is the time period.

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