

# Parenthood and Job Routinization: The Role of Family and Labour Market Policies

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## Introduction and Contribution

The ongoing profound structural changes in European labour markets—driven by automation, digitalisation, and artificial intelligence (AI)—have reshaped the nature of paid work and consequently, the conditions under which individuals form families (Matysiak and Vignoli 2024; Adserà, 2025). A key feature of these transformations is the deroutinisation of work, understood as the process through which occupations involve increasingly fewer repetitive, easily automatable, and low-autonomy tasks (World Bank, 2019). As a result, workers in occupations characterised by high routine-task intensity, namely occupations rich in repetitive and easily automatable tasks- face a heightened risk of a job loss, wage stagnation, and limited career advancement (Autor et al., 2006; Goos et al., 2009).

Stable and well-paid employment has long been recognised as a prerequisite for family formation (Adserà, 2005; Kreyenfeld, 2010; Alderotti et al., 2021). Therefore, the technological transformations in the labour market may have significant implications for fertility behaviour. Empirical evidence supports this concern: individuals employed in non-cognitive or routine jobs are less likely to become parents (Bogusz et al., 2025), and regions experiencing rapid robot adoption—where many routine jobs have disappeared—have shown substantial declines in fertility rates (Anelli et al., 2024; Matysiak et al., 2023; Constanzo, 2025).

Although technological change is difficult to halt, public policy can mitigate its adverse consequences for workers. Strong employment protection legislation may reduce job insecurity (Noelke, 2015) and protect routine workers from displacement. Generous social benefits can buffer income loss in times of unemployment while active labour market policies may facilitate re-employment (Rose, 2018; Morgan and O'Connor, 2022). Together, such policies have the potential to cushion the negative effects of deroutinisation on employment stability and material well-being, thereby supporting individuals' ability to realise their family plans.

To date, research on automation, routinisation, and fertility remains limited. Existing studies largely focus on single-country contexts, such as the United States or Germany, and offer little insight into cross-national variation or the moderating role of policy environments. This study addresses this gap by pursuing two research objectives. First, we examine how occupational deroutinisation affects fertility behaviour among working women and their partners across Europe, specifically assessing whether employment in routine-task-intensive occupations is associated with a lower probability of childbirth and fewer children by age 37. Second, we analyse whether these effects vary across national contexts and whether they are moderated by labour market and welfare policies, including employment protection legislation, social benefit generosity, and the availability of active labour market programmes.

By adopting a couple-level perspective and integrating task-based occupational measures with cross-national policy indicators, this study advances understanding of how the changing content of work influences fertility in contemporary Europe.

## **Data & Methods**

This study draws on longitudinal data from the EU Statistics on Income and Living Conditions (EU-SILC) covering the years 2005–2024 for 27 European countries. The analytical sample includes working females aged 18–49, observed over time to capture both within- and between-country variation in employment and fertility dynamics.

We employ multilevel linear regression models to account for the nested structure of the data (individuals within countries and years). The dependent variable captures (a) the number of children in the household by age 37, and (b) the transition to a(nother) child during the observation period.

The key explanatory variable is the routine task intensity of a woman's and her partner's occupation. Following Matysiak et al. (2025), we apply their task-based routinization measure derived from the European Skills, Competences, Qualifications and Occupations (ESCO) database, aggregated stepwise to ISCO occupational levels using country-specific employment weights. This allows us to capture the extent to which individuals' occupations involve routine versus non-routine tasks across labour markets and time.

We further integrate macro-level policy indicators from Eurostat and the OECD, including measures of employment protection legislation, active labour market policies, expenditure on unemployment benefits and expenditure on family benefits. We also consider childcare provision as it may affect the combination between paid employment and fertility. To control for contextual and household-level heterogeneity, we include the share of people in routine jobs in each country-year, the spouse's occupation/routinization level (as a proxy for household employment risk), household income, age, and education level. All models include country and year fixed effects, and standard errors are clustered at the country level.

## **Expected Results**

We expect to find that higher levels of routine-task intensity are negatively associated with fertility outcomes, both in terms of the likelihood of childbirth and the number of children by age 37. Women employed in occupations characterised by repetitive, standardised, and automatable tasks are likely to experience limited job autonomy, reduced opportunities for advancement, and higher perceived employment insecurity—all of which may discourage short-term fertility decisions and constrain longer-term family formation.

We further anticipate that policy environments play a crucial moderating role. In line with comparative research on employment instability and fertility (Alderotti et al., 2021; Matysiak & Vignoli, 2024), we expect that the negative fertility effects of routinised work will be attenuated in family- and employment-supportive contexts. Specifically, countries with generous childcare provision, strong employment protection, active labour market policies, and

higher family benefit expenditures are expected to display weaker or non-significant routinization effects, as these institutions mitigate work–family conflict and reduce the job insecurity. At the household level, we anticipate that dual exposure to routine employment—where both partners occupy highly routinised positions—will be associated with the lowest fertility rates, reflecting compounded risks of income volatility, limited flexibility, and constrained time resources. Conversely, couples in which at least one partner holds a non-routinised or high-autonomy occupation may exhibit higher fertility, as these jobs can buffer the economic and temporal costs of childbearing.

Finally, we expect cross-national heterogeneity in the magnitude of these effects. Welfare regimes that combine flexible labour markets with extensive family support systems (e.g., Nordic countries) are likely to show weaker routinization–fertility links, whereas regimes with limited institutional support (e.g., Southern or Eastern European contexts) may display stronger negative associations.

## References

Adsera, A. (2005). Vanishing children: From high unemployment to low fertility in developed countries. *American Economic Review*, *95*(2), 189-193.

Adserà, A. (2025). Artificial intelligence and fertility: Gender and educational inequalities in family formation. *Vienna Yearbook of Population Research*, *2025*, 1-10. <https://doi.org/10.1553/p-5fff-96k6>

Alderotti, G., Vignoli, D., Baccini, M., & Matysiak, A. (2021). Employment instability and fertility in Europe: A meta-analysis. *Demography*, *58*(3), 871–900. <https://doi.org/10.1215/00703370-9551962>

Anelli, M., Giuntella, O., & Stella, L. (2024). Robots, marriageable men, family, and fertility. *Journal of Human Resources*, *59*(2), 443-469.

Autor, D. H., Katz, L. F., & Kearney, M. S. (2006). The polarization of the US labor market. *American economic review*, *96*(2), 189-194.

Bogusz, H., Matysiak, A., & Kreyenfeld, M. (2025). Structural labour market change, cognitive work, and entry to parenthood in Germany. *Population Studies*, *79*(2), 225-251. <https://doi.org/10.1080/00324728.2024.2372018>

Costanzo, C. (2025). Robots, jobs, and optimal fertility timing: C. Costanzo. *Journal of Population Economics*, *38*(2), 51.

Goos, M., Manning, A., & Salomons, A. (2009). Job polarization in Europe. *American economic review*, *99*(2), 58-63.

Kreyenfeld, M. (2010). Uncertainties in female employment careers and the postponement of parenthood in Germany. *European sociological review*, *26*(3), 351-366.

Matysiak, A., Hardy, W., & van der Velde, L. (2025). Structural Labour Market Change and Gender Inequality in Earnings. *Work, Employment and Society*, 39(2), 426–448. <https://doi.org/10.1177/09500170241258953>

Matysiak, A., Vignoli, D. Family Life Courses, Uncertain Futures, and the Changing World of Work: State-of-the-Art and Prospects. *Eur J Population* 40, 19 (2024). <https://doi.org/10.1007/s10680-024-09701-x>

Matysiak, A., Bellani, D., & Bogusz, H. (2023). Industrial robots and regional fertility in European countries. *European Journal of Population*, 39(1), 11.

Mihaylov, E., & Tijdens, K. (2019). Measuring the routine and non-routine task content of 427 four-digit ISCO-08 occupations. *Tinbergen Institute Discussion Paper, 19-035/V*. <https://papers.tinbergen.nl/19035.pdf>

Morgan, R., O'Connor, K.J. (2022) Labor Market Policy and Subjective Well-Being During the Great Recession. *J Happiness Stud* 23, 391–422

Noelke, C. (2016) Employment Protection Legislation and the Youth Labour Market, *European Sociological Review*, Volume 32, Issue 4, Pages 471–485,

Rose, D. (2018). The impact of active labour market policies on the well-being of the unemployed. *Journal of European Social Policy*, 29(3), 396-410.

World Bank, 2019, World Development Report 2019. The Changing Nature of Work. World Bank Group.