Research Abstract for the European Population Conference

The effects of parental migration on educational and child labour outcomes for children left behind in low- and middle-income countries: a systematic review and meta-analysis

Authors: Emily Häntschel, Anne Lieke Ebbers, Natascha Wagner

Extended abstract

Introduction to Topic/Significance

"The increasing scale of migration presents new challenges for child protection" (Fu et al., 2023, p. 3). Most migrants move to improve their financial situation by benefitting from economic activity in other countries, while sometimes migrants are forced to move due to crises (Fellmeth et al., 2018; UN, 2022). Remittances sent to low- and middle-income countries (LMICs) have risen significantly over the past years (UN, 2022). Although migration can be economically beneficial, it is a common phenomenon in developing countries that children might be left behind in case of parental migration, causing families to be split up and left-behind children to be vulnerable (Antia et al., 2022; Fellmeth et al., 2018; UN, 2022). For instance, in China, the Philippines, Ecuador, and South Africa, about one-third of the children are estimated to be left behind (Fellmeth et al., 2018). These left-behind children are more vulnerable to human rights violations, such as abuse and neglect (Bakker, 2009; UNICEF, 2021). Moreover, connecting to essential services, such as education, might be extremely difficult without a parent because of financial instability, more household obligations, and less parental care and support (Bakker, 2009; UNICEF, 2021).

However, the relationship between the parental migration of left-behind children and their educational and child labour outcomes remains unclear. Although various papers have examined the relationship, evidence points to both positive and negative effects of parental migration on the educational and child labour outcomes of children left behind (Botezat & Pfeiffer, 2020; Chang et al., 2011; Marchetta & Sim, 2021). Accordingly, it is crucial to get a comprehensive understanding of the relationship to improve policy-making concerning child protection, and in particular, children left behind. This is of particular importance not just to uphold the rights of children but also to ensure the economic prosperity of the country, as parental migration can have long-term (educational) consequences on the affected children and, in turn, on the economic growth of a country as well (Hanushek & Woessmann, 2010; Shen et al., 2021; UNICEF, 2021).

Main Question/Theoretical focus

Therefore, this study aims to find an answer to the following research question: "To what extent does parental migration affect educational and child labour outcomes of the children left behind in LMICs?" The previous literature finds two effects of parental migration on children left behind's educational and child labour outcomes. On the one hand, "the income effect is the effect of non-

labour income (remittances) from migration" (Xu, 2017, p. S78). These remittances sent back by migratory parents can be used for the left-behind children's education. This suggests a positive effect on the children's educational level (Botezat & Pfeiffer, 2020; Gassmann et al., 2018). Similarly, increased schooling and an improved financial situation could decrease the probability of engaging in child labour (Roy et al., 2015). On the other hand, the "substitution effect comes from the fact of time-allocation for family activities like housework, household farm, etc." (Xu, 2017, p. S78). Children may have more household obligations to compensate for the lost time invested by the parent(s) (Bakker, 2009; Xu, 2017). Some studies indeed find that children left behind are particularly vulnerable to child labour (Kamei, 2018). Next to that, the family disruption, leading to a lack of parental care and attention, might outweigh the improved financial means. This could consequently lead to an adverse effect of parental migration on educational outcomes (Lu, 2014). Since previous research by Fu et al. (2023) also points out that remittances were mainly used to pay off debt and to fulfil basic needs, such as buying food, it is assumed that left-behind children have to engage more in (household) work and have less time for education accordingly.

Data & Methods

A meta-analysis helps to synthesise the contradictory results found in previous research, building a more robust evidence base for the net effect of parental migration, whereby particular attention can be paid to heterogeneity in effects (Grames et al., 2019; Xu, 2017). Two databases were used to examine the published literature, namely Scopus and Web of Science, between 2000 and March 3rd 2023. The year 2000 is chosen as a starting point because the ILO added the Worst Forms of Child Labour Convention in 1999 (ILO, n.d.). Ever since 2000, the definition has stayed the same. The search string was optimised using the *litsearchr* package in R, an automated approach using text mining and keyword co-occurrence networks to make the search strategy more reproducible, standardised and less susceptible to biases (Grames et al., 2019). Quantitative English studies on parental migration, children left behind, and educational and child labour outcomes in LMICs are searched for based on the PICOC protocol of Petticrew and Roberts (2008). The population concerns children aged 5-17 when they experienced parental absence. This is based on the minimum working age as defined by ILO and reports of international organisations like UNICEF (ILO & UNICEF, 2021). Parental absence due to parental internal or international migration for at least 6 months is taken as the intervention since this is considered problematic by the international community (Antia et al., 2020; Fellmeth et al., 2018). Papers for which the mean duration of parental migration was above 6 months are also included. Following previous research, the population is compared to children from non-migratory households (Antia et al., 2020; Fellmeth et al., 2018). The study focuses on educational and child labour outcomes for a low- and middle-income country context, particularly educational attainment, educational performance, educational expenditures, and child labour. The search results in 421 papers in Web of Science and 372 in Scopus, leading to a total of 793 papers to be screened in the selection process. Duplicates were removed, leaving 637 articles to be reviewed.

These papers were reviewed using *ASReview*, a machine learning technique that applies active learning to make screening more effective, transparent and less susceptible to biases (Van De Schoot et al., 2021). The program ran based on 7 key papers identified by the authors, 5 relevant and 2 irrelevant articles, used as prior knowledge to train the program (Van De Schoot et al., 2021). Stopping rules were determined beforehand based on the research of van Haastrecht et al. (2021), and, accordingly, after reviewing 474 abstracts and titles, 50 papers in a row were deemed irrelevant, and screening was stopped with 163 articles left to be reviewed. At this point, 74.41% of the total articles were screened, which should be sufficient as previous research by Van De Schoot et al. (2021, p. 130) states that: "95% of the eligible studies will be found after screening between only 8% to 33% of the studies." During this stage, 41 additional duplicates were removed that were not correctly removed by R because of formatting or spelling differences. 285 papers were not marked as relevant, leaving 148 relevant articles for an in-depth review of the full texts. Consequently, effect sizes were retrieved from 28 eligible papers.

Following previous meta-analyses of Demena et al. (2022) and Floridi et al. (2020), with various economic outcome and predictor indicators, a standardisation approach is used for comparability of the estimates, in particular the partial correlation coefficient (van Aert & Goos, 2023). The weighted average of this effect size can be calculated by using the inverse of the variance, as suggested by van Aert and Goos (2023). However, as studies and estimates can suffer from publication bias, funnel plots and multi-level meta-regressions are used to determine the size of the publication bias and the genuine effect size of parental migration on economic and child labour outcomes (Dekkers et al., 2022; Demena et al., 2022; Floridi et al., 2020). Finally, heterogeneity analyses are performed by adding moderator variables, such as the publication and empirical characteristics of the studies, which disentangles the effect of these variables from the genuine effect and looks at their impact on the estimates (Dekkers et al., 2022; Floridi et al., 2020).

Preliminary results

Preliminary analyses reveal that the substitution effect may be larger than the income effect. The summary statistics of the overall impact of child labour suggest that parental migration is positively related to child labour outcomes. The simple average effect is 0.015 with a standard error of 0.006 and a 95% confidence interval of [0.0017; 0.0278], which implies the effect is significant. The weighted average effect is 0.011 and is also significant at the 5% level. The results of education are less clear. The simple average effect is -0.004 with a standard error and confidence interval of 0.003 and [-0.0105; 0.0030], while the weighted average effect is 0.010 and significant at the 1% level. Nevertheless, as Doucouliagos (2011, p. 10) states, "a partial correlation that is less than ±0.07 can be regarded as small (25th centile), even if it is statistically significant." This suggests that parental migration has a small impact on education and child labour outcomes.

Nevertheless, after investigating the funnel plots and the funnel plot asymmetry test, the educational studies seem affected by publication bias, which could have affected the averages. Small studies with large effects are overrepresented. Accordingly, meta-regression analysis is performed to estimate the size of the genuine effect after correcting for publication bias. When

looking at the multilevel meta-regression model, the publication bias has a significant coefficient of 0.0296. After considering this, the genuine effect is -1.2251 and significant at the 1% level. In accordance with the funnel plots and the funnel plot asymmetry test, the multilevel meta-regression model for child labour suggests that the publication bias is insignificant and around 0. The genuine effect is positive but insignificant.

Knowledge Contribution

This systematic review and meta-analysis contributes to the current literature in the following ways. Our meta-analysis uniquely focuses on educational and child labour outcomes for LMICs. Existing meta-analyses on parental absence focus solely on children's (mental) health outcomes or only consider China (Chen et al., 2020; Fellmeth et al., 2018; Zhao & Yu, 2016). Moreover, to the best of our knowledge, no meta-analysis includes the effect of parental migration on child labour, although narrative reviews and individual papers on it exist in specific country cases (Asis & Ruiz-Marave, 2013; Fellmeth et al., 2018; Yang, 2004). Accordingly, our meta-analysis on the effect of parental migration on a range of educational outcomes and child labour in LMICs will be the most comprehensive study related to the topic to date. This is partly because the evidence base keeps growing due to migration's increasing relevance (UN, 2022). Consequently, higher statistical power is obtained, and both robustness and uncertainty of the effect sizes in individual studies can be estimated, meaning that consistency and generalisability can be improved (Dekkers et al., 2022). Furthermore, our meta-analysis benefits from employing tools such as *litsearchr* and *ASReview*. This increases the objectivity of our structural approach (Grames et al., 2019; Van De Schoot et al., 2021). The meta-analysis also contributes to the literature by examining the heterogeneity of effects, as these can depend on the context in which parental migration occurs (Fellmeth et al., 2018). In particular, differing effects of parental absence based on whether parents migrate internally or internationally are considered. Moreover, differences in impact for boys vs girls left behind and for different age groups are analysed.

Bibliography

Antia, K., Boucsein, J., Deckert, A., Dambach, P., Račaitė, J., Šurkienė, G., Jaenisch, T., Horstick, O., & Winkler, V. (2020). Effects of international labour migration on the mental health and well-being of left-behind children: A systematic literature review [Review]. *International Journal of Environmental Research and Public Health*, *17*(12), 1-17, Article 4335. https://doi.org/10.3390/ijerph17124335

Antia, K., Rodoreda, A. B., & Winkler, V. (2022). Parental migration and left-behind children in Georgia – school teachers' experience and perception: a qualitative study [Article]. *BMC Public Health*, *22*(1), Article 2077. https://doi.org/10.1186/s12889-022-14516-8

Asis, M. M., & Ruiz-Marave, C. (2013). Leaving a legacy: Parental migration and school outcomes among young children in the Philippines. *Asian and Pacific Migration Journal*, *22*(3), 349-375.

Bakker, C. (2009). The impact of migration on children in the Caribbean.

Botezat, A., & Pfeiffer, F. (2020). The impact of parental labour migration on left-behind children's educational and psychosocial outcomes: Evidence from Romania. *Population, Space and Place*, *26*(2), e2277.

Chang, H., Dong, X.-y., & MacPhail, F. (2011). Labor migration and time use patterns of the left-behind children and elderly in rural China. *World Development*, *39*(12), 2199-2210.

Chen, M., Sun, X., Chen, Q., & Chan, K. L. (2020). Parental migration, children's safety and psychological adjustment in rural China: A meta-analysis. *Trauma, Violence, & Abuse*, *21*(1), 113-122.

Dekkers, R., Carey, L., & Langhorne, P. (2022). *Making Literature Reviews Work: A Multidisciplinary Guide to Systematic Approaches*. Springer.

Demena, B. A., Floridi, A., & Wagner, N. (2022). The Short-Term Impact of COVID-19 on Labour Labour Market Outcomes: Comparative Systematic Evidence. In *Covid-19 and international development* (pp. 71-88). Springer.

Doucouliagos, H. C. (2011). How large is large? Preliminary and relative guidelines for interpreting partial correlations in economics.

Fellmeth, G., Rose-Clarke, K., Zhao, C., Busert, L. K., Zheng, Y., Massazza, A., Sonmez, H., Eder, B., Blewitt, A., Lertgrai, W., Orcutt, M., Ricci, K., Mohamed-Ahmed, O., Burns, R., Knipe, D., Hargreaves, S., Hesketh, T., Opondo, C., & Devakumar, D. (2018). Health impacts of parental migration on left-behind children and adolescents: a systematic review and meta-analysis [Article]. *The Lancet*, *392*(10164), 2567-2582. https://doi.org/10.1016/S0140-6736(18)32558-3

Floridi, A., Demena, B. A., & Wagner, N. (2020). Shedding light on the shadows of informality: A meta-analysis of formalization interventions targeted at informal firms. *Labour Economics*, *67*, 101925.

Fu, Y., Jordan, L. P., Hoiting, I., Kim, T., & Wickramage, K. (2023). 'We have similar sad stories': a life history analysis of left-behind children in Cambodian residential care. *Children and Youth Services Review*, 107234.

Gassmann, F., Siegel, M., Vanore, M., & Waidler, J. (2018). Unpacking the Relationship between Parental Migration and Child well-Being: Evidence from Moldova and Georgia [Article]. *Child Indicators Research*, *11*(2), 423-440. https://doi.org/10.1007/s12187-017-9461-z

Grames, E. M., Stillman, A. N., Tingley, M. W., & Elphick, C. S. (2019). An automated approach to identifying search terms for systematic reviews using keyword co-occurrence networks. *Methods in Ecology and Evolution*, *10*(10), 1645-1654.

Hanushek, E. A., & Woessmann, L. (2010). Education and economic growth. *Economics of education*, *60*, 67.

ILO. (n.d.). *International Labour Standards on Child labour*. Retrieved 13-02-2023 from https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/child-labour/lang--en/index.htm

ILO, & UNICEF. (2021). Child Labour: Global Estimates 2020, Trends and the Road Forward. In: International Labour Office and UNICEF.

Kamei, A. (2018). Parental absence and agency: The household characteristics of hazardous forms of child labour in Nepal. *Journal of International Development*, *30*(7), 1116-1141.

Lu, Y. (2014). Parental migration and education of left-behind children: A comparison of two settings [Article]. *Journal of Marriage and Family*, *76*(5), 1082-1098. https://doi.org/10.1111/jomf.12139

Marchetta, F., & Sim, S. (2021). The effect of parental migration on the schooling of children left behind in rural Cambodia [Article]. *World Development*, *146*, Article 105593. https://doi.org/10.1016/j.worlddev.2021.105593

Petticrew, M., & Roberts, H. (2008). *Systematic reviews in the social sciences: A practical guide*. John Wiley & Sons.

Roy, A. K., Singh, P., & Roy, U. (2015). Impact of rural-urban labour migration on education of children: A case study of left behind and accompanied migrant children in India. *Space and Culture, India*, *2*(4), 17-34.

Shen, W., Hu, L. C., & Hannum, E. (2021). Effect pathways of informal family separation on children's outcomes: Paternal labor migration and long-term educational attainment of left-behind children in rural China [Article]. *Social Science Research*, *97*, Article 102576. https://doi.org/10.1016/j.ssresearch.2021.102576

UN. (2022). *The Sustainable Development Goals Report 2022*. D. o. E. a. S. Affairs. https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf

UNICEF. (2021, 27 October 2021). *Strengthening child protection systems: Every child has the right to access vital social services and fair justice systems.* Retrieved 13-02-2023 from https://www.unicef.org/protection/strengthening-child-protection-systems

van Aert, R. C., & Goos, C. (2023). A critical reflection on computing the sampling variance of the partial correlation coefficient. *Research Synthesis Methods*, *14*(3), 520-525.

Van De Schoot, R., De Bruin, J., Schram, R., Zahedi, P., De Boer, J., Weijdema, F., Kramer, B., Huijts, M., Hoogerwerf, M., & Ferdinands, G. (2021). An open source machine learning framework for efficient and transparent systematic reviews. *Nature machine intelligence*, *3*(2), 125-133.

van Haastrecht, M., Sarhan, I., Yigit Ozkan, B., Brinkhuis, M., & Spruit, M. (2021). SYMBALS: A systematic review methodology blending active learning and snowballing. *Frontiers in research metrics and analytics*, *6*, 685591.

Xu, H. (2017). The time use pattern and labour supply of the left behind spouse and children in rural China. *China Economic Review*, *46*, S77-S101.

Yang, D. (2004). How remittances help migrant families. *Migration Information Source of the Migration Policy Institute* https://www.migrationpolicy.org/article/how-remittances-help-migrant-families

Zhao, F., & Yu, G. (2016). Parental Migration and Rural Left-Behind Children's Mental Health in China: A Meta-Analysis Based on Mental Health Test [Article]. *Journal of Child and Family Studies*, *25*(12), 3462-3472. https://doi.org/10.1007/s10826-016-0517-3