The Making of Missing Girls: Comparative Evidence from Population Administrative Microdata of Three East Asian Populations, 1652-1945

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Excessive girl mortality in historical East Asia has been widely discussed. However, most empirical evidence remains limited to description of aggregate patterns rather than analytics of family behaviors. Systematic comparisons on the birth timing/order differentials in the investment of parents and co-resident kin remains particularly rare. Our study supplements the literature with new comparative findings for three East Asian historical populations, where cultural preference for specific child sex and birth order were common and yet distinctive between each other. We take advantage of unique large-scale individual-level panel datasets transcribed from the imperial lineage records in China (1652–1936), local population registers in Japan (1716–1870), and household registration records in Taiwan (1906–1945). We examine and compare between populations the probability of female births and girl mortality risks by presence/absence of parents, male siblings, grandparents, and other kin, as well as their interaction effects with the girl's birth position in relation to her same- and opposite-sex siblings.

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Extended abstract

This study focuses on family determinants of sex inequality in reproduction and child survival of three East Asian populations between 1700 and 1950. In particular, we examine parental and other kin effects, jointly considering birth order and other sibling characteristics, on the probability of birth and early-life survival of girls.

Excessive girl mortality in historical East Asia has been widely discussed. That phenomenon is commonly known as 'missing girls,' which in turn reflects strong son preference. However, most empirical evidence is limited to the description of aggregate sex ratio patterns rather than analytics of micro-level family behaviors.

Especially, systematic comparisons considering birth order differentials in the investment of parents and co-resident kin in shaping girl mortality remains particularly rare. In a recent study by the authors of this proposal, we use similar historical population datasets in East Asia and compare how birth order moderates parental effects in shaping boy survival chances. In all three populations from northeast China, northeast Japan, and north Taiwan where birth order favoritism prevailed, we find very similar birth order differentials in parental investment. The findings imply salient inequality shaped by family behavior and cultural norms on top of the evolutionary biological processes. Unfortunately, the Chinese household registers (CMGPD-LN) omit many girl records – an administrative reflection of strong son preference indeed, we could not systematically compare girl mortality in that study.

In this proposed study, instead, we take advantage of data transcribed from the Imperial Lineage of Qing China (CMGPD-IL) to compare with Japanese and Taiwanese registration data for a comprehensive understanding of the making of "missing girls" in historical East Asia. Unlike the CMGPD-LN that registers just commoners serving the royal court, the CMGPD-IL records members of the Qing Imperial Lineage over 14 generations from the mid-17th century to the early 20th century. Most importantly, the CMGPD-IL provides complete recording of both boys and girls in pre-modern China, which facilitates our proposed comparative study on girl births and survival. The Japanese household register data (1716-1870) we use in the proposed study has also been expanded from two villages studied in the previous project to 5 villages and towns, which allow us to further compare between rural and urban settings in early modern Japan. The Taiwanese household registration data (1906-1945) give us another valuable comparison group

as early modern Chinese population, which makes our overall comparison design complete and comprehensive. Above all, the three datasets are longitudinal data that record detailed information about individual- and household-level demographic events and socioeconomic status.

We plan to apply the discrete-time event-history approach in studying determinants of girl births and survival. Specifically, we use logistic regressions to examine the effects of kin (grandparents, aunts, uncles, etc.) availability, parental characteristics, and sex composition and sequence of surviving children on the probability of new girl births, as well as on the mortality risks of surviving girls.

With a comparative design of comparable longitudinal data and methods, although the analysis is scheduled to finish by the end of May, we believe findings of this proposed research should contribute to a better understanding of reproduction and survival disadvantages of girls in East Asia – an important yet understudied topic. Moreover, our East Asian comparisons should communicate with the increasingly large literature of kin effects on reproduction and child survival in historical and contemporary populations, derived from the kin selection theory. In particular, as grandparents are an important focus of our study, the findings should also connect the observed historical East Asian patterns to cumulating empirical examinations on the 'grandmother hypothesis' in the West.