

Sibship Size and Parental Investment: The Case of China

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The consequences of fertility decisions on child welfare have long been of concern to scholars and policymakers. Most of our knowledge to date has been generated from high-fertility settings. Yet, almost half of the world population today lives in countries with fertility levels below 2.1, including many countries outside the US and Western Europe (United Nations 2016). As more countries in the developing world are expected to reach below-replacement fertility levels in the near future, there is a compelling need to understand the impact of sibship size (i.e. number of siblings) on child welfare in developing countries under the new fertility regime.

This study examines whether having more siblings reduces parental investment received by the child, a key mechanism underlying the relationship between sibship size and educational attainment. In a low-fertility, developing setting, the direction and magnitude of the sibship size effect on parental investment remains an empirical question. On one hand, with limited government expenditure on education and high private cost of education, a large sibship size is more likely to dilute parental resources, resulting in lower level of investment in each child (Knodel, Havanon, and Sittitrai 1990; Maralani 2008; Marteleto and de Souza 2012; Eloundou-Enyegue and Williams 2006; Lu and Treiman 2008). On the other hand, because parents' aspirations for child education determine both fertility and investment decisions, any difference in parental investment by sibship size might be due to the selection into fertility rather than the effect of sibship size itself. In addition, if parents allocate resources unequally among children (Behrman 1997; Becker and Tomes 1986), the sibship size effect might vary across children within the same household.

The current study is set in China during the period of 2010-2016. Two previous studies have examined sibship size and education in China around 1990 (Li, Zhang, and Zhu 2008; Qian 2017). Since then, China's fertility has continued to decline to reach below the replacement level (Morgan, Zhigang, and Hayford 2009; Cai 2010; Feeney and Jianhua 1994). Latest estimate of period Total Fertility Rate (TFR) using the 2015 mini census has placed China among countries with the lowest fertility rates in the world (Z. Guo, Gietel-Basten, and Gu 2018). Fertility ideals in China have also reached well below the two-child norm that characterizes many western low-fertility countries (Morgan, Zhigang, and Hayford 2009; Ding and Hesketh 2006; Wei, Xue, and Wang 2018; Zheng et al. 2016). Meanwhile, parents' aspirations for each child, along with investment in children's education, has grown rapidly in both rural and urban areas (Attané 2016b; Greenhalgh 2005, 227, 234; Chi and Qian 2016), and the escalating direct and opportunity costs of education are borne entirely by households (Li et al. 2017; Heckman and Yi 2012; Liu et al. 2009; Attané 2016a).

In the US, Blake (Blake 1981) argued that sibship size not only constitutes one of the most important background characteristics that influence children's educational opportunities, but also, compared to family socio-economic status, it is more "readily affected by choice" (Blake 1981, 440). For China, investigating the effects of sibship size has an even deeper significance, as couples' family size decisions are shaped by public policy to a greater extent. Previously, the one-child policy introduced in 1979 has sparked extensive debate about its effect on child wellbeing (Zeng and Hesketh 2016). The current study is set in a period during which exemptions to the one-child policy have been gradually introduced¹. It thus provides the first glimpse into how children might be affected under the new policy regime.

¹ By 2011, all provinces had permitted couples who were both only-children to have two children. In November 2013, couples in which at least of the partners was an only-child were allowed to have two children. In October 2015, a universal two-child policy was introduced. See Zeng and Hesketh (2016) for an overview.

Drawing on data from the China Family Panel Studies (CFPS), this research also addresses two empirical challenges faced by previous research. First, although resource dilution is often taken to explain the relationship between sibship size and education observed in developing countries (Kugler and Kumar 2017; Knodel, Havanon, and Sittitrai 1990; Knodel and Wongsith 1991; Eloundou-Enyegue and Williams 2006; Marteleto and de Souza 2012; Li, Zhang, and Zhu 2008), few of the studies have directly examined parental investment, a main intervening variable between sibship size and education according to the resource dilution hypothesis (Blake 1989, 1981). This study employs detailed measures of parental investment, which distinguish household-shared resources from resources received by a specific child, monetary from non-monetary resources. Second, this study exploits the longitudinal nature of the survey to mediate the bias arising from the joint determination of family size and educational investment. For instance, if parents who value education of the existing children are less likely to have an additional child, the negative effect of sibship size would have been overestimated by simply comparing children with more and less siblings (Angrist, Lavy, and Schlosser 2010; G. Guo and VanWey 1999; Ferrari and Zuanna 2010; Workman 2017). Following Guo and Vanwey (1999a), this study compares outcomes *within* the same child before and after the birth of a sibling. This way, it effectively controls for any individual-level heterogeneity that might confound the relationship between sibship size and parental educational investment.

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