

Decomposing the Effects of Household Characteristics on Child Poverty in Ten Countries

Tsui-o Tai
University of California, Irvine

Introduction

Child poverty is still a serious concern in many industrialized countries. According to the OECD data, child poverty rates ranged from 3% to 25% in 30 OECD countries in the mid-2000s (OECD 2008). Overall and child poverty is consistently found to be negatively associated with social spending. For instance, Cantillon and his associates (2002) found a negative connection between social expenditures and the poverty rates in 16 OECD countries (Cantillon and his associates 2002, Behrendt 2002, Bradbury and Jantti 1999). However, the connection between social spending and child poverty could not explain the case of East Asian countries. In the early 2000s, the child poverty rates of East Asian countries including Japan, South Korea, and Taiwan range from 8% to 13%, falling between the lowest poverty levels in social democratic countries and the relatively high ones in liberal countries. Meanwhile, the overall social spending and family benefits are relatively limited in these East Asian countries. For example, based on OECD and Taiwan's statistics, in 2005 the average social spending as a percentage of GDP of the three East Asian countries was 10%, much lower than 20%, the average of 30 OECD countries (OECD 2010).

How do East Asian countries keep child poverty low with very limited social spending? The difference in family structure between Eastern and Western societies provides some hints. The family has been an important safety net to buffer poverty. Co-residence can be an effective strategy for coping with financial needs because it permits pooling income across earners and non-earners and diversifying income sources. By sharing housing and other living expenses, co-residence also benefits household members due to economies of scale (Alcock 1996). Past research has shown that family structure and is related to poverty risk. Children living with single mothers have the highest poverty risk across countries (McLahanan and Casper 1995; Rainwater and Smeeding 2003). In East Asia, the proportion of children living with single mothers is relatively low compared to the majority of Western countries. The low rate of single motherhood is due both to a relatively low rate of non-marital births and to a relatively low divorce rate (Chen 1994; Lee 1988). Combined, this should contribute to a lower child poverty level

Using 2003-2006 data from the Luxembourg Income Study (LIS), this paper

analyzes how child poverty varies in ten countries. I pose three questions: 1) How do household characteristics affect child poverty? 2) How do the effects of household characteristics on poverty vary across welfare regimes? 3) To what extent is the poverty gap between welfare regimes driven by household characteristics (e.g., age, gender, work status)?

Methods

This study relies on the data from the Luxembourg Income Study (LIS), wave 6, surveyed between 2003 and 2006. Ten countries with compatible variables are selected in this study. They are Australia, Canada, the UK, the US (liberal countries), Denmark, Finland, Norway, Sweden (social democratic), South Korea, and Taiwan (East Asian). Because this study focuses on child poverty, only households containing children are selected. The unweighted samples for households range between 3,289 (*Australia*) and 33,463 (*US*). The unit of analysis is person, including children and adults living with children.

The dependent variable is the likelihood of being poor (*poor=1, else=0*). Following the convention of much cross-national research, this study uses a relative poverty approach. The poverty line is defined as below 50% of the median net disposable household income (i.e., after tax and after transfers). An equivalence scale power 0.5 is utilized to adjust for family size and the economies of scale due to co-residence.

Household characteristics are employed to predict poverty risk for children, 17 and younger, and the individuals with whom they reside: the age, gender, marital status, work status, and educational attainment of the household head and the numbers of children and older adults in the household. In order to examine the differences in poverty risk between welfare regimes, ten countries are divided into three welfare regime types: social democratic, liberal, and East Asian (the reference group) (Esping-Andersen 1990; White and Goodman 1988).

Two steps of analysis are conducted to assess the variation in poverty across welfare regimes. Robust-cluster logistic regression models examine the effects of household characteristics and welfare regime types on poverty. Fully interaction models (interaction of welfare regime types and all household characteristics) investigate how the effects of household characteristics on poverty vary across welfare regimes.

Next, the non-linear Fairlie decomposition method is employed to examine the extent to which the poverty gap between regime types can be attributed to the compositional differences in household characteristics (e.g., age, education, work status) compared with non-compositional differences (mainly social provisions and

other private transfers). In this paper, the non-compositional differences in poverty risk are the differences in poverty risk when children and those residing with children in different regime types are equivalently endowed with the same characteristics. Because the dependent variable is a binary variable, the nonlinear Fairlie decomposition technique is more appropriate than the Blinder-Oaxaca decomposition method, which is based on linear assumptions (Fairlie 2003). In this study, two sets of decomposition analyses are conducted: the comparison between East Asia and social democratic countries; and the comparison between East Asia and liberal countries. East Asian countries are the reference group.

Findings

The poverty rates for children and individuals residing with children are 6% in social democratic countries, 12% in East Asian countries, and 16% in liberal countries. The descriptive statistics show that East Asian countries have favorable household composition; having heads who are more highly educated and less often female buffers poverty risk.

Multivariate Analyses

Robust-cluster logistic regression models are utilized to predict personal poverty risk with household characteristics and regime types. First, we examine how welfare regimes differ in terms of their effects on poverty risk. Compared to East Asian respondents, individuals residing with children in social democratic countries are less likely to be poor, while those in liberal countries are more vulnerable to poverty risk. Next, we address whether the welfare regime differences in poverty risk result from country-to-country differences in household characteristics. When individuals with similar household characteristics are compared, the coefficient of liberal countries significantly declines from 0.77 to 0.13 ($p < 0.05$). In other words, the likelihood of being poor in liberal countries is reduced significantly when the beneficial household characteristics of East Asia are omitted. At the same time, the coefficient of social democratic countries declines from -0.89 to -1.25, although the Chow-test indicates the difference is not significant. In sum, logistic models show that the favorable household characteristics of East Asian countries reduce poverty risk significantly.

In terms of the impact of household characteristics, consistent with previous studies, the connection of the household head's age and poverty is U-shaped, meaning that individuals with younger and older household heads are at a higher poverty risk compared to those with the prime-age heads. Households headed by married and employed heads are less likely to be poor. Educational attainment is negatively correlated with poverty, while the number of children in the household enhances poverty.

To further examine the differences in the effects of household characteristics on poverty between welfare regimes, interaction terms are included in the next analysis. According to the fully interaction model, the negative effect of being married on poverty is even stronger in liberal and social democratic countries. The magnitude of education's mitigating poverty in social democratic countries is weaker than in East Asia. In addition, the number of older adults yields a higher poverty risk in East Asia than in liberal or social democratic countries.

Fairlie Decomposition

Finally, how does each of the household characteristics contribute to the poverty gap between welfare regimes? Fairlie decomposition analyses answer the above question. Using East Asia as the reference group, two parts of decomposition analysis are conducted: social democratic countries versus East Asian countries and liberal countries versus East Asian countries. Compared with East Asian countries, social democratic countries' poverty rate is six percentage points lower. The most influential factors contributing to the higher poverty risk in East Asia are lower educational attainment and more older adults in the household. Because households with highly educated heads and with fewer older adults are less vulnerable to poverty risk, the larger proportion of households with highly educated heads and fewer older adults leads to the lower poverty in social democratic countries. On the other hand, the factors counteracting the lower poverty risk in social democratic countries are the more prevalence of households headed by female, single, and non-working respondents in these Nordic countries. Furthermore, the counteracting effects outweigh the contributing effects. In other words, the household characteristics of East Asia protect households with children from poverty. Without the poverty-protective household composition, the poverty rate in East Asia will increase to 16%. The decomposition of liberal and East Asian countries has similar results.

In sum, this study makes a unique contribution to the study of poverty. This study provides a cross-national analysis by posing the unique case of East Asia as a strategic reference for the familiar range of well-studied Western welfare states. East Asia is distinct from Western welfare states in terms of its limited social provisions, and poverty-protective household composition. I leverage on this case to clarify how household characteristics partially shape the variation in personal poverty across welfare regime types.