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Gender differences in intra-household educational expenditures in Malaysia

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ABSTRACT

Prior studies examining the apparent reduction of the gender gap in education in Malaysia have been based on the gross enrolment rates. This study examines whether there are significant gender differentials in intra-household educational expenditures in Malaysia and whether gender differences vary by ethnicity or geographical region by using the Engel curve framework and the Hurdle model. There is little evidence of gender bias in Malaysia. The findings suggest that while there are no significant gender differences in intra-household educational expenditures nationally, these do exist in some regions, for the 5 to 9 and 10 to 14 age groups. Such differences typically occur once children are enrolled in school. There is evidence of a significant pro-female gap for Bumiputera children ages 15 to 19.

1. Introduction

Human capital theory provides explanation for the gender gaps in educational investments. Females are less likely than males to be involved in part-time work and usually withdraw from the labor market at an earlier stage after getting married or having children. Households have fewer incentives to invest in their daughters' education (Becker, 1981). There is considerable evidence in the literature that resources are not allocated randomly within households in many developing countries (Alderman and King, 1998; Parish and Willis, 1993). There is a tendency for households in some societies to prioritize sons' education over daughters' when the resources available for education are scarce (Knodel, 1997).

Recent evidence shows that the differences in education between men and women has disappeared, or even reversed in some countries. The reversal of gender gap has occurred in almost all developed countries and many developing countries as well (Ganguli Prokopovych et al., 2011). In the East Asia and Pacific region, girls' secondary enrolment exceeds that of boys in China, Fiji, Malaysia, Mongolia, the Philippines, Samoa and Thailand (World Bank, 2012a). Even in low income countries like Bangladesh, there is evidence of reverse gender gap in secondary schooling outcomes. In terms of enrolment status and years of schooling completed, boys are found to lag behind girls in the rural as well as in the urban area (Asadullah and Chaudhury, 2009).

Malaysia's impressive growth record is matched with important advances in gender equality. Malaysia's sustained economic growth over the past three decades has been matched by a narrowing (and even reversal) of gender gaps in education enrollment and literacy, increased women's labor force participation, as well as the incidence of wage work and real earnings. The Malaysian economy has transformed from agricultural based to manufacturing and services. Consistent with the structural transformation of the economy, employment patterns have changed from agriculture to the secondary and tertiary sectors (Nagaraj et al., 2014). Employment in the services sector alone accounted for 52.6 percent of total employment in 2009 (MIDA, 2010). The changing face of the Malaysian labor force has been made possible by the massive investment in educational opportunities over the years. In 2011, 16 percent of Malaysia's annual federal budget was spent on education (MOE, 2014). In addition, increasing job opportunities in the fast-expanding manufacturing and service sectors encourages females to enroll in school. Labor force participation rates for women aged 15+ increased from 42.4 percent in 1997 to 44.4 percent in 2014 (World Bank, 2014a).

The Malaysian government consistently demonstrates a great interest in educational investments. This has been demonstrated in national policy from the First Malaysia Plan (1966) through the Tenth Malaysia Plan (2011–2015). According to the Tenth Malaysia Plan (2011–2015), education is both the basis of innovation and the driving force behind a productive economy, which are crucial components of Vision 2020 (that aims at Malaysia becoming a fully developed nation by the year 2020). As a consequence of this

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renewed focus on education and human capital, between 1970 and 2012, the enrolment ratio in upper secondary education has increased from 20.1 percent to 78.0 percent while tertiary enrolment has increased from 0.6 percent to 42.0 percent. The sharp rise in tertiary enrolment is due to a significant expansion in the supply of higher education especially since the early 1990s. The availability of study loans for Malaysians through the National Higher Education Fund, with only a 1 percent administrative charge, provides greater opportunities for students to pursue their tertiary education (NHEFC, 2008).

Much progress has been made to ensure women's advancement in Malaysia since the early 1990s, especially in the educational sector. Literacy rates for youth female have increased from 86.5 percent in 1980 to 98.5 percent in 2010 with the rapid increase in educational opportunities in Malaysia (World Bank, 2014b). The government's policy to advance the role of women in development was embodied in the National Policy for Women, launched in 1989, and a chapter on women was included in the Sixth Malaysia Plan (Malaysia, 1991: Chapter 16). Subsequent national development plans included major policy initiatives for the advancement of women in almost every sector. The 10th Malaysia Plan sets out on an ambitious target to increase women's labor force participation to 55 percent in 2015, within the broader framework of labor market reform. In the Global Gender Gap report 2014, in terms of enrolment in tertiary education, Malaysian females outnumber males by 1.2: 1. Malaysia scored well for the literacy rate, enrolment in primary education and in secondary education, with the female to male ratios at 0.95:1, 0.96:1 and 0.98:1, respectively (World Economic Forum, 2014).

Recent estimates indicate that the average return to education for female workers is much higher than for male workers at the secondary level (16.5 percent versus 27.2 percent) and somewhat higher at the university level (15.5 percent versus 16.1 percent). Using the Malaysian Household Income Survey 2007, Kenayathulla (2013) has estimated the average private returns to education by gender. The findings suggest that the average return to education for female workers is much higher than for male workers at the secondary level (16.5 percent versus 27.2 percent) and somewhat higher at the university level (15.5 percent versus 16.1 percent). This indicates that with an additional year of schooling, labor market earnings increase more for females than for males. Additionally, ethnicity[1] is an important factor in determining educational decisions in Malaysia (Kenayathulla, 2012, 2013). Previous studies found that Chinese women are more likely to work due to their better educational attainment and are able to take advantage of their employment opportunities in the private sector (Amin and Alam, 2008). Cultural factors contribute to the decisions on educational expenditures. Embedded in the Confucian tradition, Malaysian Chinese parents greatly emphasize on learning and academic success (Agadjanian and Liew, 2005).

Prior studies examining the apparent reduction of the gender gap in education in Malaysia used 1988 data and have been based on the gross enrollment rates (Lillard and Willis, 1994; Pong, 1995). In order to further confirm these results, it is important to analyze whether gender bias exists in the allocation of educational expenditures within the household using alternative econometric analysis. This study examines whether there are significant gender differences in the intra-household educational expenditures in Malaysia and whether gender differences vary by ethnicity or geographical region. By using advanced empirical techniques, our research addresses policies that might be implemented to reduce the prevalence of such biases.

Individual-level data enable direct comparisons of household educational expenditures on male and female children. Due to lack of individual-level data, differences in intrahousehold allocation have to be estimated using the indirect household expenditure methodology, commonly known as the Engel curve approach.

The indirect Engel curve method uses household-level expenditure data to detect differential treatment by examining how changes in household gender composition changes household expenditure patterns. Previous studies largely have relied on the indirect approach (as data are available only at the household level). The Engel curve's ability to detect gender bias has been questioned because it generally has failed to find evidence of discrimination even in the places where it widely is known to exist (Deaton, 1997, pp. 239–241).

Kingdon (2005) suggests that there are two possible reasons for the failure of the Engle curve. First, there are two channels through which gender bias may occur in expenditures on any types of goods. The foremost is through zero purchases for daughters and positive purchases for sons. The second is through higher expenditures for sons given positive purchases for both daughters and sons. The author claims that if gender bias occurs through only one of the channels, then averaging across the two channels may dilute the bias. For instance, suppose there is a bias against girls in a household decision to incur positive expenditures for education (the decision whether to enroll daughters in school). At the same time, conditional on enrollment, the same household spends more on its daughters' than on its sons' education because of safety issues (such as transportation) and clothing. Thus, averaging across these two channels may result in the conclusion that there is no bias even when there is strong gender discrimination in the first decision (to enroll the daughters in school). The second potential reason for the failure of the Engel curve approach is due to the nature of the data. The Engle curve attempts to deduce differential treatment from data aggregated from households. It could be that using aggregated data make it difficult to detect discrimination (Aslam and Kingdon, 2008).

In order to address the first possible reason for the Engel curve's failure, Kingdon (2005) proposes using Hurdle models. These models enable the decision of whether to incur any education expenditures to be modeled separately from the decision of how much to spend on education, conditional on positive educational expenditures. In order to address the second potential cause of the Engel curve's inadequacy, which is related to aggregation of household-level data, recent studies have attempted to analyze educational expenditure allocations for each child to investigate differential treatment by gender (Kingdon, 2005; Aslam and Kingdon, 2008). Kingdon (2005) finds that "even when individual – and household-level variables and equations are made as similar as possible, household level equations consistently fail to capture the full extent of the gender bias" (p. 440). Based on this assertion, one might reasonably conclude that individual-level data are preferable to household-level data when estimating gender effects.

Due to data limitation, this study uses Malaysian household-level data to examine whether there are gender differentials in the allocation of educational expenditures within the household. This study is the first to use nationally representative data to determine whether intra-household expenditures on education impose bias on the educational opportunities available to girls in Malaysia. This study is the first to use an Engle curve framework[2] to examine the existence of gender differentials in educational expenditures in Malaysia. Previous studies in Malaysia using an Engle curve framework primarily have focused on food consumption. In the

[1] Malaysia is a multiethnic society comprise of Malays, Indigenous, Chinese, Indians, and others. Bumiputera (Malays and Indigenous) is the largest ethnic group, comprising 67.4% of the total population. Chinese and Indians are 24.6 and 7.3% of the total population, respectively (DSM, 2006).

[2] Engel curve framework describes how household expenditures on particular goods or services (in this context, expenditures on education) depend on household income.