

ETHNICITY AND SCHOOLING IN MALAYSIA: THE ROLE OF POLICY

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This paper has two objectives. The first is to discuss the meaning of ethnicity and how this meaning is used in constructing national education policies. The second is to discuss the possible channels through which policies affect the access to schooling for different ethnic groups. Most of my examples here are drawn from Malaysia, because this is the multi-ethnic society that I am most familiar with, and ethnicity has been an area of heated debate and controversy in Malaysia.

Explanations for Ethnic Differences in Schooling

Sociological studies of social mobility have long identified ethnicity as an important factor in school attainment and achievement. Several theoretical perspectives have been put forward to explain the differential schooling of different ethnic groups. The first, and most often used explanation is a socioeconomic status (SES) one. According to this explanation, most of the education differences across ethnic groups result from variations in SES backgrounds, with the more educationally advantaged groups having higher SES. For example, black and Hispanic families in the U.S. have lower income than white and Asian families. This explains why white and Asian students outperform black and Hispanic students in school. There are many reasons why higher SES students do better in school than do lower SES students. Higher SES parents can afford to move to locations where there are desirable schools, buy tutoring after school, or buy private education. Higher SES parents have higher education themselves, thus they are more efficient than lower SES parents in transmitting knowledge at home. Higher SES parents are more skillful in forming social network as well, and such "social capital" (Coleman, 1988) can be channeled into support for children's education. Still other sociologists emphasize "cultural capital" as a factor of higher SES students' school success (Bourdieu, 1986; Lareau, 1989). Higher SES students possess the kind of culture that schools value, while low SES students are penalized for their lower class culture.

Nevertheless, even after socioeconomic background factors are controlled in statistical models, most studies still find race/ethnicity to be significant determinants of an individual's schooling. When residual ethnic differences remain, typically either one and/or both explanations are given: culture and structure.

Studies of ethnic minorities' educational achievement in the U.S. have adopted a cultural explanation. For example, Hsu (1971) attributed the extraordinarily high educational achievement among Chinese Americans to the overall Chinese cultural system, which places a premium on industry, persistence, family cohesiveness, obedience, respect for elders and authority, education, and personal discipline. Such personality qualities do not only affect Chinese Americans' educational achievement and attainment. They also indirectly influence teachers' evaluations of students. Research in the U.S. has found that teachers tend to award Asian Americans higher grades than other students.

However, culture is not something biologically inherent in a people. Culture may change in response to changes in the external environment. Recent studies of interethnic differences in

education emphasize the structure of economic opportunities and its relations with schooling. Ogbu (1983) suggests that the success and failure of minority students in the U.S. lies in their perceived relationship between schools and the structure of economic opportunity. The "castelike minorities," such as blacks and Hispanics, who came to this country through slavery or colonization, have a long history of subordination. Their experience of racism and discrimination prevents them from accepting the myth that achieving higher SES requires succeeding in the educational system. Rather, they believe that discrimination puts a ceiling on their economic opportunities, even if they succeed in school. On the other hand, studies on the ethnic "enclave economy" (Portes and Jensen, 1987) found that ethnic workers gain a commensurate return to their education in small businesses owned by members of their ethnic groups. Thus, Asian Americans are motivated to achieve because of the existence of an Asian enclave economy that counters the hostility of the host society by creating economic opportunities in family and kin-based businesses (Hirschman and Wong, 1986). Although they face discrimination, Asian minority students maintain a belief in the educational system because their education pays off in their ethnic enclave economy.

The Meaning of Ethnicity

Implicit in all these theories is the assumption that "ethnic" groups can be clearly defined. To a large extent, this is not the case. Ethnic groups often are politically constructed to serve a purpose; they are created and used by policymakers to achieve national (and perhaps personal) goals. Once they are constructed, individuals within each group begin to internalize the label, to accept the ethnicity as given and to act according to cultural norms. For example, under the Apartheid law in South Africa, the category "coloured" was created to refer to races other than Europeans and Africans. Thus the "coloured" group includes many diverse cultural groups. However, after a generation, the "coloured" people began to believe there was such a thing as the "coloured" culture (Wallerstein, 1987). Similarly, in today's Malaysia, ethnic consciousness and identity are strong, and race/ethnicity is everyday language. However, the Malaysian ethnicity categorization - Malays, Chinese, and Indians - that is so well internalized, in fact represents three broad ethnic categories that emerged in relatively recent history. They were created by the British for administrative convenience during the colonial period and have further evolved since Malaysia's independence in 1957 (Takei et al., 1973; Watson, 1980). These groups are by no means culturally homogenous within themselves. According to Hirschman (1987):

The Indian Population encompasses Hindus, Muslims, Sikhs, Buddhists, and Christians and is also differentiated by a variety of Indian Pakistani and Sri Lankan mother tongues. The Chinese Population is similarly cross-cut by religion and language. A minority of Malaysian-Chinese, known as Perakan or Baba Chinese, have adopted much of Malay culture, including language, dress and cuisine. Conversion to Islam and the adoption of Malay language and custom typically allow a person of any ancestry to be considered a Malay. (see also Fenton, 1999, p. 3)

To a large extent, ethnicity is socially constructed. Having said that, I do not deny that there are physical attributes and deep cultural differences between groups. Groups do differ by their language, ancestry, and customs, however finely the line is drawn. But it is equally important to note that public policy has much to do with how groups are formed. Indeed, the same people in the three ethnic groups in Malaysia (Malay, Chinese, and Indian) would be considered the same ethnic group ("coloured") under Apartheid law in South Africa. Under the Apartheid, the Malays, Chinese, and Indians who migrated to South Africa would feel closer to each other in term of their cultural background than they did in Malaysia. Thus, any

discussion of ethnic differences in schooling would be futile without contextualizing the issue in economics and politics. My intention here is to bring in the role of public policy in defining ethnicity, and to discuss how policies affect ethnic differences in schooling. I use the case of Malaysia to illustrate the usefulness of discussing public policies for an understanding of the relationship between ethnicity and schooling.

Ethnicity and Construction of Policy in Malaysia

Groups are often referred to as the "majority" or "minorities". Whether a group is a majority or minority group depends not only on the numerical size of the group, but also on its political power relative to other groups. In this sense, the majority group in Malaysia is the Malays, consisting of over 60 percent of the total population. The Chinese and Indians are minority groups, consisting of 30 and 10 percent of the total population, respectively.

In political or popular discourse in Malaysia, "ethnicity" is often used interchangeably with "race." In social science discussions, these are substantially different terms. Social scientists use "race" to refer to the physical or biological, and they use "ethnicity" to refer to the cultural. "Race" is primarily a description of skin color or visible physical attributes. Clearly, skin color is more continuous than categorical, particularly among descendants of mixed marriages. Thus, the term "race" lends little to sociological or anthropological understanding of people. By contrast, "ethnicity" or "ethnic group" is used primarily in contexts of cultural difference, which can be traced back to shared ancestry and common language, religion, or place of origin. Therefore, the term "ethnicity" has a greater claim to sociological analysis than "race" (Fenton, 1999). In Malaysia, the differences in visible physical attributes among Malays, Chinese, and Indians are relatively small. It is their different cultures, particularly their language and religion, that have been the basis for conflict.

Malaysia's independence marked a political victory for the Malays, who are Muslim and speak a different language from the non-Malays. Soon after independence, in 1961, the Education Act was enacted, and the National Education Policy was introduced. The National Education Policy reflected two related goals: to establish a national system of education, and to make the Malay language the national language, as well as the medium of instruction in all government schools, colleges, and universities. Under the policy, the Malay language became the sole official language of the country, and was termed "Bahasa Malaysia" - the Malaysian language (see Pong, 1995, for details of this policy at the primary and secondary level).

The trigger for ethnic-based public policies in Malaysia was fundamentally economic, but revealed as cultural. Malaysian public policies have been constructed under the assumption that the Malay majority needs economic protection from the non-Malay immigrants. The Prime Minister, Mahathir Bin Mohamad, who has engineered Malaysia's preferential policies since he gained office in 1981, is vocal about the differences in "character" of the two groups. Although he used the term "hereditary" in his writing in 1970, what he really meant was that such differences in group "characters" are a result of the environment. In particular, he emphasized the economic conditions that shaped the way of life of the Malay and Chinese communities. The economic surplus for Malays and scarcity for the Chinese created two different types of people, according to Mahathir (1970):

"Rice cultivation, in which the majority of the Malays were occupied, is a seasonal occupation. Actual work takes up only two months, but the yield is sufficient for the whole year. This was especially so in the days when the population was small and land was plentiful. There was a lot of free time... The hot, humid climate of the land was not

conducive to either vigorous work or even to mental activity. Thus, except for a few, people were content to spend their unlimited leisure in merely resting or in extensive conversation with neighbours and friends." (p. 21-22)

"The history of China is littered with disasters, both natural and man-made. Four thousand years ago a great flood was recorded, and subsequently floods alternated with famine, while waves of invaders, predatory emperors and warlords ravaged the country. For the Chinese people life was one continuous struggle for survival. In the process the weak in mind and body lost out to the strong and the resourceful... Like emigrants everywhere they were the people who were not content with their lot and were moved by a desire for a better life, and obviously by the determination to work for this... The Malays whose own hereditary and environmental influence had been so debilitating, could do nothing but retreat before the onslaught of the Chinese immigrants." (p.24-25)

Such was the sentiment among Malay politicians at the time of Malaysia's independence, when major public policies were formulated. The idea that immigrants, particularly the Chinese, were predators, and that the easy-going Malays were losing out was pervasive within the Malay community. Later, in 1998, Mahathir was more explicit about the incompatibility of the Malay culture with involvement in trade, business and the market place. He described how Malays mismanage their money, are careless about accounting and about the repayment of debts. He attributed these Malay traits to the fact that Malays came from a peasant farming and petty trade background. Malays did not have the requisite attitudes, ethics, and approaches for business. In sum, their "culture" prevented them from competing equally with other ethnic groups in the modern economy, and "unless this culture was radically changed, there was no possibility of transforming a peasant and petty trading community into a modern business one." (Mahathir, 1998, p.117-118)

Based on the economic division between Malays and the immigrant Chinese and Indians, the Malay-dominated political party (Barisan Nasional coalition) launched the New Economic Policy (NEP) in 1971. The NEP, which was in force for the next 20 years, had two objectives: (1) the eradication of poverty irrespective of race, and (2) the elimination of the identification of race with economy (Mahathir, 1998). The policy is an example of a policy giving preferential treatment to the majority ethnic group.

A new category "*bumiputera*" was created to refer to the beneficiaries of the NEP. The construction of *bumiputera* ethnicity served two purposes. First, it gave legitimacy to the group receiving preferential treatment under the policy. In Malay language, *bumiputera* means "son of the soil." This implies that the group is entitled to favorable treatment because they are the original inhabitants of the land, although it is subject to debate regarding who were the first people on the land of today's Malaysia. Second, using this new term instead of the "Malay" category created a broader political base, as *bumiputera* refers not only to the Muslim Malays on the Peninsula, but it also incorporates the indigenous peoples of East Malaysia of Sabah. These indigenous peoples do not share the same language and religion of Malays on the Peninsula (Khan and Loh, 1992; Fenton, 1999). This broad base was useful in fostering the smooth incorporation of Sabah into Malaysia. It also created a clear numerical majority ethnic group in the country.

The goal of the NEP was to increase the economic share held by the *bumiputeras* from 2.4% to 30%. This was done by moving *bumiputeras* into business quickly through giving them special considerations for government contracts and licenses. This policy was widely abused initially. Many *bumiputeras* sought the opportunity to get contracts and licenses, but promptly

sold them to their so-called "Ali Baba" joint venture partners or to the non-*bumiputeras* (Mahathir, 1998). It was quite clear to the politicians that economic change would not occur without cultural change. The Prime Minister, Mahathir Bin Mohamad, explained this very well:

A cultural reformation, involving new skills, new approaches and new values, was essential if the *bumiputeras* were going to be changed into a confident, commercially sophisticated community, capable of competing with the non-*bumiputeras* business community. Without this cultural change the *bumiputeras* would fail, and if they failed, the NEP would fail too. Education and training therefore made up the biggest elements in the NEP's initiatives. (Mahathir, 1998, p. 12)

Under the NEP, university education became the terrain of ethnic contest. Before the NEP, few *bumiputeras* were admitted to the university, and they were grossly underrepresented in lucrative fields such as science and engineering. Under the NEP, a quota system was instituted such that Malay predominance was ensured in the university population of students, faculty and staff. Almost four out of every five university scholarships were awarded to Malay students (Mehmet and Yip, 1986), who only needed to possess the minimum requirements for admission.

To further increase *bumiputeras'* access to higher education, an "Off-campus Universities Programme" was set up after the implementation of the NEP (Ling et al., 1988). This programme brings to Malaysia American professors from 20 American universities of the Mid-West Universities Consortium for International Activities (MUCIA), to prepare *bumiputera* students for degrees in Arts, Science, and Engineering. This programme also supports *bumiputera* students in degree programmes overseas, in Britain, Australia, and Canada. In addition to the "Off-campus Universities Programme," public funds were directed to establish several institutions, such as MARA junior colleges, which admit exclusively *bumiputera* students for post-secondary vocational training.

Direct effect of Policy on Ethnic Differences in Education

These preferential policies have been proven to be remarkably successful in raising educational and economic status among the *bumiputeras*. Within a decade of the preferential policies, Malays' educational attainment caught up with the Chinese. I have used the Second Malaysia Family Life Survey (MFLS-2) to illustrate this (Pong, 1993). This survey covers the Malay, Chinese, and Indian populations on the Peninsula. Table 1 presents a logistic regression analysis of school attainment for four cohorts of individuals aged 19 or above at the time of the survey in 1988. The logistic model estimates the odds of transiting from primary to secondary school as the dependent variable. The independent variables include the individual's age, gender, and socioeconomic status as measured by parents' education and father's occupation, and most importantly, ethnicity. Ethnicity is indicated by two dichotomous variables: Chinese and Indian. The reference group is Malay.

We can see a striking result when we compare the ethnicity coefficients across cohorts. From the oldest to the youngest cohort, the signs of the coefficients of being Chinese and Indian are switched from significantly positive to insignificant, and then to significantly negative. Note that this result remains largely the same when socioeconomic status is omitted from the model. Among the oldest cohort born between 1940 and 1949, non-Malays were more likely than were the Malays to go from the primary to the secondary level, given the same family background. Among the 1950-1954 birth cohort, however, the Malays were not different from

the Chinese or Indians, when family background factors are controlled. The ethnic difference was completely reversed for cohorts born after 1954. The odds of making a transition from primary to secondary school were lower among the Chinese and Indians than among the Malays, given the same family background. Put more positively, the Malay children increased their secondary school transitions more than did Indian or Chinese children.

Table 1. Secondary School Attainment for Malaysian Individuals Born between 1940 and 1964

Variable	1940-1949	1950-1954	1955-1959	1960-1964
Ethnicity:				
being Chinese	.383 *	-.277	-.754 *	-1.329 *
being Indian	.483 *	.195	-.647 *	-1.367 *
Demographic:				
age	-.101 *	-.137 *	-.054	-.063
being male	1.162 *	1.062 *	.830 *	.496 *
Socioeconomic Status:				
mother had primary school	.583 *	.353 *	.733 *	.623 *
mother had secondary school	1.991 *	1.632 *	2.126 *	2.219 *
father had primary school	.386 *	.266	.058	.398 *
father had secondary school	1.435 *	1.105 *	1.010 *	.829
father had white-collar occupation	1.589	1.437 *	1.204 *	1.756 *
father had blue-collar occupation	.666 *	1.090 *	.813 *	1.213 *
Log likelihood ratio statistic	315.79	206.67	200.91	192.16
Sample size	1318	1068	1171	1075

$p < .05$. Source: Adapted from Table 2 in Pong (1993).

I have reported a similar trend at the post-secondary level (Pong, 1995). Among the cohort born between 1938 and 1949, Chinese and Indians' post-secondary attainment is about 1.5 times that of Malays. By contrast, the cohort born between 1965 and 1969 reveals an advantage of Malays' post-secondary attainment over non-Malays. Educational expansion after Malaysia's independence has benefited all ethnic groups. While educational opportunities increased for all, they increased faster for the Malays. This finding suggests that governmental policies were successful in achieving their intended outcome: to promote the educational attainment of Malay students.

Socioeconomic status alone does not account for the existence of ethnic differences, much less for its reversal. The driving force is strong state policy that alters the structure of economic opportunities for each ethnic group, followed by cultural change in response to the economic environment. The most remarkable change was Malays' attitudes towards finance and business, according to Mahathir (1998):

The cultural change which the Malays and the other *bumiputeras* underwent has made them very different from their predecessors, but they are still Malays... They still speak the same languages, albeit laced with new words, and preserve their indigenous skills and arts, albeit in a more modern fashion. But as far as their business culture is concerned, they have changed almost completely. They are almost a totally different people (p. 121-122).

What comes with this change in business culture is the change of Malays' self-image and self-confidence. No doubt today's Malays are a much more motivated people than they were a century ago. Such qualities are key elements for their school success.

Policy, Family Strategies, and Ethnic Differences in Education

The impact of preferential policy in changing ethnic inequalities in education is never straightforward, because human behaviors are complex. Indeed, families of different ethnic groups are likely to respond to the policy in very different ways, and they may adopt family strategies not anticipated by policymakers. In this section, I examine the indirect effects of preferential policy on ethnic differentials in schooling. Using Malaysia as an example, I discuss how preferential policy affects education by changing fertility or sibship size for each ethnic group.

Effect of Policy on Fertility

Demographic research has linked Malaysia's preferential policy to ethnic differences in fertility rates. Hirschman (1986) has argued that the extraordinary costs of higher education for Chinese and Indian children underlay a rapid decline in fertility among Chinese and Indians relative to Malays in the 1970s. According to Jones (1990), the NEP accounts for the slow decline in Malay fertility during a period in which fertility dropped more rapidly among Chinese and Indians, as well as among ethnic Malays who resided in Singapore and Indonesia. Govindasamy and DaVanzo (1992) further showed that the NEP had increased the number of children desired by Malay parents, but left unchanged the number desired by Chinese and Indian parents. Indeed, the different fertility trends among Malays, Chinese, and Indian speak for themselves. From 1965 to 1986, the Chinese and Indian total fertility rates fell from 5.6 to 2.4, and from 6.7 to 3.0, respectively. By contrast, over the same twenty-year period, Malay fertility fell only from 5.5 to 4.7 (Hamid et al., 1988). Because Malays' fertility became the highest Malay children were increasingly likely (relative to other groups) to share households with many siblings.

Effect of Sibship Size on Educational Attainment

Fertility and sibship size are two sides of the same coin. When fertility rates are high, children have more siblings. Previous research has found a negative effect of sibship size, i.e., the number of siblings, on children's educational attainment. One of the most widespread explanations is that of "resource dilution" (Blake 1989). By this account, a child's sibship size is a measure of unobserved per capita familial resources, which include parents' time, emotional and physical energy, attention, and ability to interact with each child. In smaller families these material resources are concentrated on fewer children than is the case in larger families, where resources are diluted. Furthermore, large families provide fewer opportunities for children to communicate with their parents, and so afford less intellectual stimulation to children. This "resource dilution" hypothesis is consistent with an economic formulation of a "quantity-quality" tradeoff (Becker and Lewis, 1974). According to this economic model, parents make simultaneous decisions about their number of children - the "quantity" they want to produce - and the "quality" of each child. Child quality is subject to parental investments in their health, education, job training, etc. Parents who want higher quality children ultimately bear fewer of them while investing more heavily in each individual child.

Possible Links Between Policy, Sibship Size, and Education

In two opposing ways, the government's preferential policies which give favorable treatment to Malays might be expected to alter the sibship size effect among the Malay and non-Malay populations. First, by reducing the direct costs of being in school, the preferential education policies constitute a type of external support for Malay children's education. Conceivably, this support to Malay families may weaken the sibship size effect on their children's school attainment. However, preferential policies under the NEP simultaneously promoted economic activities for Malays, and these activities compete with educational activities. By staying in school, Malay children forgo earnings from the labor market; and with these preferential policies for economic activities such indirect costs of education increase accordingly. For example, the government provided price supports for agricultural production to improve rural living standards and to increase Malays' business ownership in the country. These economic opportunities raised the opportunity costs of schooling Malay children. Children from larger families, with fewer resources per child, would be most likely to be enticed by economic subsidies, and so to forgo schooling in order to take immediate advantage of economic opportunities. Despite educational policies aimed at lowering direct schooling costs, the economic returns to other productive activities increase indirect schooling costs that may outweigh the benefits of schooling. If the increased opportunity cost outweighed the reduced direct costs that accompanied Malaysia's preferential policies, then intra-familial competition for educational resources among siblings could have increased. Under such conditions, government policy may have exacerbated a negative relation between sibship size and educational attainment among Malays.

Given two potential and opposing consequences of preferential policies for the sibship size effect, there appears to be little a priori basis on which to predict the net impact of such policies. I again analyzed data from the MFLS-2 to examine the sibship size effect empirically. Using a logistic regression, I estimate the odds of secondary school attainment for Malays and non-Malays separately. The major independent variable is sibship size, measured by the total number of brothers and sisters at the time of the survey. Two birth cohorts were analyzed for each ethnicity: individuals born between 1950 and 1959, and those born between 1960 and 1969. This variable is used to gauge policy effects: the younger cohort is affected by the NEP but the older cohort is not. The regressions control for possible confounding factors which included parents' socioeconomic status, urban/rural residence, the child's age, and the child's gender.

Table 2 gives the results. No significant net effect of sibship size on secondary school attainment was seen among children born between 1950 and 1959, either for Malays or non-Malays. However, the effect of sibship size was significantly negative among both groups of children born later, between 1960 and 1969. The cohort difference in the coefficient of sibship size appears to be larger among Malays than that among non-Malays. While the magnitude of the sib-size effect is about the same for the two birth cohorts of non-Malays, among Malays the effect is almost twice as large for the 1960-1969 cohort as for the 1950-1959 cohort. This suggests a possible increase over-time in the sibship size effect among Malays.

To evaluate the indirect impact of government policy on school attainment via sibship size, I calculated predicted probabilities of secondary school attainment from these regressions based on sample means. For both Malays and non-Malays, two predicted probabilities are given in Table 3. The "actual" predicted probabilities are based on means of sibship size for each cohort in the sample. The "hypothetical" predicted probabilities are calculated supposing that

mean sibship size for Malays and non-Malays in the 1960-1969 cohorts had not changed from the earlier cohorts (i.e., that sibship size had remained constant).

Table 2. Secondary School Attainment for Birth Cohorts Born between 1950 and 1969, Malays and Non-Malays

Variable	Malay		Non-Malay	
	1950-1959	1960-1969	1950-1959	1960-1969
Sibship Size	.057	-.106 *	-.101	-.100 *
Demographic:				
age	-.076 *	-.084 *	-.022	-.087 *
male	.686 *	.515 *	.972 *	.427 *
Socioeconomic Status:				
mother's education	.285 *	.133 *	.150 *	.181 *
father's education	-.037	.037	.044	.037
father had white-collar occupation	1.709 *	1.661 *	1.073 *	1.672 *
father had blue-collar occupation	1.207 *	.444	.796	.445
Pseudo R ²	.1433	.0985	.1178	.1447
Sample size	504	1245	437	1149

Note: These regressions also include urban/rural residence and the Indian ethnicity in the non-Malay equations. These variables are not statistically significant. Source: Adapted from Table 2 in Pong (1997).

Table 3. Actual and hypothetical Probabilities of Children's Secondary School Attainment by Birth Cohort and Ethnicity.

Birth Cohort	Malay		Non-Malay	
	Actual	Hypothetical	Actual	Hypothetical
1950-1959	.62	--	.57	--
1960-1969	.88	.88	.78	.76

Source: Pong (1997). The "hypothetical" predicted probabilities are calculated assuming that mean sibship size in the 1960-69 cohorts was the same as in the 1950-59 cohorts. The "actual" predicted probabilities are based on actual mean sibships size for each cohorts.

Among the 1950-1959 cohorts of individuals, the difference between Malays and non-Malays' probability of attaining secondary school is only .05, after adjusting for individual and family characteristics. This ethnic difference in actual predicted probabilities doubled among the 1960-1969 cohorts.

Among Malays of the 1960-1969 cohorts, there is no difference between the actual and hypothetical predicted probabilities (.88). This results from the fact that although the effect of sibship size increased, the number of siblings remained constant, and these effects cancelled each other out. By contrast, among non-Malays, the actual probability is greater than the hypothetical probability. Assuming that the later cohort of non-Malays had maintained the mean number of siblings as in the earlier cohort, their predicted probability of attaining secondary school would have been .76 rather than .78. The ethnic difference would have been 12 percent larger, as well. In other words, the chance of non-Malays' attaining secondary

school, which is already lower than Malays', would have been further reduced such that the difference grew from .10 to .12.

These results are intriguing. After taking account of individual and family factors, Malays and non-Malays are becoming more similar in their likelihood of attaining secondary school than would have been the case, in part because their parents' fertility rates differed more. This finding may have significant implications for Malaysia's education and family planning policies. The government intended to increase Malay children's educational attainment by offering subsidies and scholarships, and by adopting quotas in institutions of higher education. However, these policies may have contributed indirectly to the growing differentiation of family size between Malay and non-Malay populations, with Malay families becoming larger relative to Chinese and Indian families. As a consequence of this relative growth, the educational attainment of Malay children, relative to Chinese and Indian children, has increased more gradually than would otherwise have been the case if Malay fertility had declined at the same rates as did fertility among the Chinese and Indian populations. Eventually, ethnic differences in the relation between family size and children's education may even tend to neutralize Malaysia's preferential educational policies.

It is evident that by decreasing their fertility or changing their intra household resource allocation, non-Malay families could not entirely compensate for dramatic increases in the cost of education or reductions in the returns to education. What also is clear, however, is that the efforts of the non-Malay families did have some "payoff" to their children. Fertility control clearly was rational in that it diminished the gap in Malay children's likelihood of attaining secondary education. Had Chinese and Indian parents not constrained their fertility, a 20 percent larger gap would have resulted in the likelihood of secondary attainment. This research thus underscores the ability of families to respond rationally to policy pressures, and in ways not always anticipated by public planners.

Summary and Conclusion

This paper underscores the importance of public policy in ethnicity-schooling relationships. I use the example of Malaysia to illustrate that strong public policy could have substantial and long-lasting effects on changing ethnic differences in education. Malaysia is not unique for its strong policies. Many other nations, such as Fiji, Nigeria, Sri Lanka, Uganda, and India are also known for their preferential policies (Sowell, 1990; Myron and Katzenstein, 1981). In the U.S., preferential policies are stipulated under the "affirmative action" laws. Whatever it is named, preferential policies are constructed to maintain certain ethnic outcomes. How each nation constructs its preferential policies and how effective these policies are in changing ethnic differentials depends, to a large extent, on the political power of the beneficiary ethnic group. In Malaysia, the group given favorable treatment is the majority ethnic group that dominates the government. In other countries, such as the U.S., where the beneficiary is the minority ethnic group which has little political power, it takes much longer to achieve policy goals. Sometimes the goal of equal representation by ethnicity in education may never be achieved.

Family strategies adopted by different ethnic groups may undermine preferential policies. I have given the example of how Malaysia's preferential policy affects fertility trends for the majority and minority groups. This in turn widened the gap of sibship size for these groups, and consequently narrowed their education gap.

Further research needs to look into what other family strategies emerge in the face of policy designed to affect ethnic differences in education. For example, preferential policy in Malaysia has promoted female labor force participation among *bumiputeras*, especially among married *bumiputera* women. More *bumiputera* mothers are now working full time outside the home. Research in the U.S. has found lower eighth grade achievement among children with full-time employed mothers, compared to children with stay-at-home mothers (Muller, 1995). Would maternal employment affect *bumiputera* children negatively as well? This may be another example of family strategy unforeseen by policymakers. More empirical studies are needed to disentangle the complex effects of preferential policy on ethnic differences in education.

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