

THE COST OF SCHOOLING: DOES IT MATTER?

H. Osman Rani
Faculty of Management and Economics
Universiti Pendidikan Sultan Idris

Abstract

The objectives of this study are to identify what schooling costs are borne by parents, to assess the extent to which these costs place a financial burden on parents, and to examine the impact of schooling expenditure on student performance. In addition, the study was to explore the differences in the costs of schooling between rural and urban children in Malaysian secondary schools. A sample survey with a cross-sectional design was carried out in 2005 to cover 1, 742 Form Four students from 25 secondary national schools in four states of Peninsular Malaysia. The results from detailed analysis were categorized into four main observations: (1) the breakdown of schooling expenditure; (2) schooling expenditure as percentage of income, (3) parental perception on the burden of schooling, and (4) the impact of schooling expenditure on student performance. The evidence underscores the importance of schooling expenditure and the spreading the availability of schooling facilitates to all. Providing sufficient financial assistance such as subsidies and scholarships for poor students should continue to be very high on policy agenda.

Keywords: Cost of schooling, financial burden, student performance, rural and urban children, secondary schools

Abstrak

Kajian ini dilakukan bagi mengenal pasti jumlah beban kewangan yang ditanggung oleh ibu bapa; menaksir sejauh mana kos yang ditanggung menjadi beban kepada ibu bapa dan penjaga; dan mencari kesan daripada peruntukan kewangan ini terhadap pencapaian seseorang pelajar. Kajian ini mencuba menelusuri perbezaan perbelanjaan pembelajaran antara kawasan bandar dengan luar bandar. Daripada kajian *cross-sectional* yang dijalankan pada tahun 2005 ke atas 1, 742 orang pelajar tingkatan empat daripada 25 buah sekolah menengah kerajaan di empat buah negeri, empat kategori pemerhatian dibuat; pertama, pecahan perbelanjaan persekolahan; kedua, peratus peruntukan perbelanjaan persekolahan daripada pendapatan; ketiga, persepsi ibu bapa terhadap tanggungan perbelanjaan tersebut; dan keempat, kesan daripada perbelanjaan tersebut kepada pencapaian akademik pelajar. Kajian ini berjaya menggariskan kepentingan perbelanjaan untuk sekolah dan kemudahan prasarana secara menyeluruh di sekolah-sekolah.

Pemberian bantuan kewangan mencukupi seperti subsidi dan biasiswa kepada pelajar miskin wajarlah diteruskan supaya menjadi agenda dasar yang utama.

Kata Kunci: Kos persekolahan, beban kewangan, pencapaian pelajar, kanak-kanak luar bandar dan bandar, sekolah menengah

BACKGROUND

In line with the thrusts of the Education Development 2001-2010, Malaysian education programme have continued to emphasise on increasing accessibility, equity, strengthening the delivery system, as well as improving the achievement of rural students to reduce the performance gap between rural and urban areas (Malaysia, 2003: 102). During the Eighth Malaysia Plan period (2001-2005), RM43.7 billion or 26% of the government development allocation was allocated for education and training. Of this, about RM7 billion or 16 per cent was for primary school education; and RM11 billion or a quarter was for secondary school education. On average, the development expenditure for primary schools came to around RM440 per student per year as compared with RM1, 740 for secondary schools.

Table 1 show student enrolment in public education institutions (excluding tertiary education institutions) in 2000 and 2005. About half of student population were in primary schools, and one-third in secondary schools

Table 1: Student Enrolment in Public Education Institutions, 2000 and 2005

Level of Education	Number of Students		Percentage of Total	
	2000	2005	2000	2005
Pre-school ¹ (4-6)	539,469	702,897	9.8	11.6
Primary	2,907,123	3,044,977	52.6	50.1
Lower Secondary	1,256,772	1,330,229	22.7	21.9
Upper Secondary	707,835	736,618	12.8	12.6
Post-Secondary	94,544	199,672	0.4	0.6
Teacher Education				
Total	5,529,483	6,076,029	100.0	100.0

¹ includes private pre-schools

Source: Ninth Malaysian Plan, 2006-2010

Although the private sector complemented government efforts by providing places and quality education, the emphasis has always been at the post-secondary level. Presently, there is limited private school participation in the school system apart from preschools and Islamic religious schools. Primary and secondary schools are essentially government monopoly (Bakri, 2003).¹

The cost of education is not only borne by the government, but also by parents (or carers) whether indirectly through taxes or directly through personal expenditure to support the day-to-day schooling activities. Parents have to meet a number of costs in order to educate their children. These include school fees, school uniform, books and equipment, pocket money for meals, school trips and other charges. While many of these are quite standard as they are determined by the schools and usually with the support of Parent-Teacher's Associations and the government, there are also expenditures which may vary widely among students, such as extra reading materials and tuitions.

While some parents may have to bear the total cost of schooling, some may have gotten financial assistance through educational support programmes such as subsidies, scholarships, textbook-on-loan and hostel facilities. During the period 2001-03, for example, a total of RM728.1 million was spent by the government under these programmes benefiting 2.5 million students, especially from the low-income families in the rural areas and children with special needs. This amounted to RM290 per student during the period. In the latest 2007 Government Budget, for instance, RM310 million would be set aside to benefit 1.5 million children from poor families. These children are expected to receive higher monthly school allowances – RM50 for those in primary school and RM70 for secondary school students, up RM20 from previous year. The “zero exam fees” plans as stated in the 2007 Budget, which will affect 5.5 million pupils, is a step towards free and compulsory education – a direction developing countries have taken.

As noted by Loke Yim Pheng, the secretary general of the National Union of Teaching Profession (NUTP), “the weakness in the education system is the wide disparity between the performance of pupils in rural and urban areas”. (New Sunday Times, September 10, 2006). Efforts to reduce the performance gap between rural and urban school have continued through the upgrading of teaching and learning facilities, including computer laboratories, and placement of more trained teachers in rural schools. Despite the extensive financial support by the government on schooling activities, such activities are actually not totally free. Parents still have to bear some costs of schooling their children.

¹ In addition, there are very few private international schools but Malaysians are excluded except under very unusual circumstances requiring ministerial permission.

OBJECTIVES OF STUDY

Since parents are very much concerned with the recent increase in the cost of education,² which the government cannot simply ignore the message, and that there are insufficient data regarding the burden of education in Malaysia, the financial strain faced by families in sending their children to school requires attention. The lack of information may lead to an inability to act accordingly.

The objectives of this study are straight forward: firstly, to identify what schooling costs are borne by parents; secondly, to assess the extent to which these costs place a financial burden on parents, which could potentially result in social exclusion; and thirdly, to examine the impact of schooling expenditure on student performance, which might explain why parents are willing to sacrifice on their children's education. This suggests the following hypotheses: (1) that parents with higher socioeconomic status, as reflected by higher income, will spend more on their children's education, and (2) higher expenditure on education would likely produce students with better examination results.

The study will in the process explore the differences in the costs of schooling between rural and urban children. However, the focus is limited to secondary education in *Sekolah Menengah Kebangsaan* (National Secondary Schools), defined as government fully-assisted schools.

DATA SOURCES AND METHODOLOGY

A sample survey with a cross-sectional design was carried out in 2005. It covered 1,742 Form Four students from 25 secondary national schools in four states of Peninsular Malaysia: two representing the more advanced states (Selangor and Perak) and two from the least developed states (Kelantan and Terengganu). Schools in each state, selected at random, are stratified by location: 60 per cent rural and 40 per cent urban.

The survey content was developed to focus on the schooling costs borne by parents of the selected students. Data were collected directly from survey respondents. One set was from students for information on personal information and school performance, which was based on the Form Three level *Peperiksaan Menengah Rendah* (PMR) national examinations at end of 2004. Another set was from their respective parents for information such as schooling expenditure, parental income, and educational attainment. Several features were in place to help respondents complete the questionnaires properly, including logic and consistency checks, and a glossary of terms and concepts.

² For example, the recent increase in school fees and school bus fares has caused a stir among Malaysian parents and became front page news (Utusan Malaysia, 4 January 2006; Berita Harian, 4 January 2006).

The schooling expenditure, was divided as follows: school fees (annual school fees, including fees for co-curriculum activities), text books (including exercise books and stationery as required by schools), school uniform (including uniform for co-curriculum such as scouts, police cadets and sports), transport from home and back from school (such as fares for school bus and boats, and cost of petrol for personal vehicles), pocket money for school meals, tuition (extra tuition fees outside school hours for school subjects including extra reading and writing books, but excluding other learning activities such as music and religious classes not related to formal school examinations), and other (mainly hostel fees, educational insurance, and school trips).

All costs were measured for one academic year based on the students' experience in 2004. It was assumed that the cost a Form Three level represents an average for the overall secondary school level (Form One to Form Five).

Student performance was measured by PMR examination results. In general, a student has to take nine examination subjects in PMR examinations. In this study, only results from five common subjects for all students were considered: Science, Mathematics, English, Bahasa Melayu (Malay Language) and History.

The data collected directly from the respondents were analyzed using descriptive statistics and regression technique to estimate the impact of educational expenditure on student performance based on the PMR results.

OBSERVATIONS

From a sample of 687 respondents in urban areas and 1,055 in rural areas, the average income of parents (defined as combined incomes of father and mother) in urban areas was found to be RM21,417 per year as compared with RM12,438 (about 40 per cent lower) for rural parents. Urban parents tend to support and average of 2.8 schooling children as compared with 3.2 for rural parents. Expressed in another way, 27 per cent of urban parents and, to a larger extent, about 40 per cent of rural parents have four or more schooling children. The differences in the burden of schooling by these two groups of families. The results from detailed analysis are categorized in four main observations with respect to the following:

1. The breakdown of schooling expenditure
2. Schooling expenditure as percentage of income
3. Parental perception on the burden of schooling
4. The impact of schooling expenditure on student performance

1. The breakdown of schooling expenditure

As shown in the Table 2, the average cost of schooling was found to be RM1, 782 per student per year. The cost in rural areas which averaged RM1, 590 was about 22 per cent lower than urban areas (RM2, 045). If we were to take away the non-compulsory components, grouped under ‘Others’ such as hostel fees, school visits and insurance, the total cost of schooling would be reduced by about 10 per cent. The financial burden of parents would be reduced further by about 10 per cent if we were to deduct the subsidies component.

Table 2: Average Costs of Schooling in Secondary Schools

Expenditure Items (RM per Year)	Urban	%	Rural	%	Total	%
School Fees (+ Curriculum)	96	5.3	112	7.7	106	6.6
Text Books + Stationery	202	11.1	188	12.9	194	12.0
School Uniform	120	6.6	119	8.2	120	7.4
Transport	270	14.8	194	13.2	224	13.9
Pocket Money	495	27.2	448	30.8	467	29.0
Tuition	503	27.6	231	15.9	348	21.6
Subsidies (+ Free Books)	136	7.5	164	11.2	153	9.5
TOTAL	1822	100.0	1456	100.0	1611	100
Others (Hostels + Visits + Insurance)	223		135		171	
GRAND TOTAL	2045		1590		1782	

In total, the biggest component of schooling expenditure is pocket money which comprised 29 per cent, followed by tuition (21.6%) and transport (14%). Parents spend an average of about RM2.00 per day per child as pocket money to cover meals, and RM RM348 per student per year on tuition. The high percentage spent on tuition reflects the attitudes of parents on the importance of learning and scoring good examination results. The other mandatory components, such as school fees and school uniform are relatively small, which together account for less than 15 per cent.

While in general, the cost of schooling was lower in rural areas, what seems surprising is the higher proportion of expenditure on pocket money and school fees in rural areas compared with urban areas. As expected, rural children received more subsidies (such as Textbook Loan Scheme, boarding facilities, *Skim Baucer Tuisyen*, and *Tabung Wang Amanah Pelajar Miskin*) which on average accounted for about 11 per cent of total expenditure compared with 7.5 per cent for urban children. The higher educational expenditure for an urban child was mainly explained by higher costs of textbooks, transport and tuition.

An urban student spent an average of RM503 per year on tuition compared with RM231 for a rural student.

2. *Schooling expenditure as percentage of income*

The burden of schooling is not only explained by the absolute cost but also by the ability of parents to pay for the cost. In other words, it is also a function of parental income and the number of schooling children that they have to support. Table 3 summarises the burden of schooling in terms of cost per student as a percentage of income, as well as the total cost of schooling children as percentage of income.

On average, parents spend about 9 per cent of their income to finance the schooling of a child in secondary school. Because of lower income earned by rural parents, they tend to spend 10.5 per cent of their income on one child as against 8.3 per cent for urban parents. If we take into consideration the number of children that parents have to support, the percentage becomes more staggering.

Table 3: Schooling Expenditure as Percentage of Income

	Urban	Rural	Total
Expenditure per schooling child	8.3	10.5	9.1
Expenditure on all schooling children	22.9	33.8	26.9

On the assumption that the cost of educating a primary school child is 60 per cent of the cost of a secondary school child, in general, parents spend more than a quarter of their income on schooling their children. In rural areas, parents tend to spend about one-third of their income, while in urban areas the burden is slightly less than a quarter of their income.

3. *Parental perception on the burden of schooling*

Parents were also asked on how they feel about the burden of financing their children's education even after taking into account the subsidies that their children may receive. Every one out of five parents surveyed thought that meeting the schooling cost expected of them was a very heavy burden. More than half think that it was moderately heavy. Less than a quarter did not consider the schooling cost as a burden.

Table 4: Perception of Parents on the Financial Burden of Schooling Their Children

Is schooling your children poses a financial burden to you	Urban	Rural	Total
Yes, heavily	23.9	19.5	21.2
Yes, moderately	59.6	53.6	56.0
No	16.5	26.9	22.8

As shown in Table 4, quite surprisingly 24 per cent of urban parents considered the financial of schooling their children as very heavy. By contrast, only 20 per cent of rural parents thought that the burden was very heavy. Only 17 per cent of urban parents as against 27 per cent of rural parents considered schooling their children posed no financial burden. One possible explanation is that the financial assistance received by rural parents have helped eased their burden more than urban parents.

In addition, the survey found that practically all parents think that education was important for their children. But nearly 15 per cent overall, irrespective of urban or rural parents, did not give much hop that their children’s education could lead them for better lives in future. While these parents might be skeptical about their children’s future, they still thought that having education was a better option than without.

4. *The impact of schooling expenditure on student performance*

Many studies worldwide have been done to explain student performance. The issues are not simple. Performance measurement can be as complex as the many goals societies have for their schools (World Bank, 2003). In Malaysia, the national assessment systems based on centralised examinations are essential for monitoring educational achievement. Since centralised examinations, such as PMR, make relevant information widely available they can be useful for generating accountability (Wobmann, 2003). In this study, PMR examination results on five compulsory subjects (Science, Mathematics, English, Malay and History) were used to measure the output, the overall performance.

Detailed results on inputs influencing student performance tend to vary across countries, time and content. However, nearly all empirical studies of measured learning achievements agree that home background accounts for most of the explainable variation in learning outcomes (Hanushek, 1995; World Bank, 2003). Half or more of the variation in performance across schools was due to variation in students’ socioeconomic status, not to factors under school control. Schools normally account for only a small part of variance in student learning outcomes (OECD, 2001).

Data on total expenditure per pupil are rarely available in analysis on student performance. Few studies available for developing countries do not seem to arrive at conclusive evidence on the influence of schooling expenditure on student performance (Velez, Schiefelbein & Valenzuela, 1993; Hanushek, 1995). Past studies on Malaysia too tend to support the important role of socioeconomic status in explaining student performance (see, for example, Wan Zahid, 1973; Asmah Bee, 1975; Awang Had, 1983; Sharifah, 1991). Since the centralised examinations can have a major impact on students' life, chance are parents who can afford will exert pressure on their children, such as spending on extra tuitions and books, for better examination results.

For educational outputs, there are always controversies as to how inputs affect them. Economists normally would summarize this relationship under the metaphor or a "production function". By using the education production function, we will relate examination results to inputs in the sample as specified below:

$$\text{Log PMR}_i = a_i + b_1 \text{UR}_i + b_2 \text{MF}_i + b_3 \text{BN}_i + b_4 \text{PE}_i + b_5 \text{logPY}_i + b_6 \text{logX}_i + e_i$$

Where

- PMR_i = average *i*th students' examination results from five subjects in *Peperiksaan Menengah Rendah* (Mathematics, Science, English, Malay and History) with grade A = 5, B = 4, C, = 3, D = 2 and E = 1;
- UR_i = 1 if the *i*th student is from an urban school and 1 otherwise (rural school);
- MF_i = 1 if the *i*th student is male and 0 otherwise (female);
- BN_i = 1 if the *i*th student is bumiputera and 0 otherwise (non-bumiputera)
- PE_i = parent's educational attainment (the higher level between father and mother): 6 (degree), 5 (STPM/Diploma), 4 (Upper secondary), 3 (Lower secondary), 2 (Primary) and 1 (never went to school).
- PY_i = Parental monthly income (combination of father's and mother's income)
- X_i = Total schooling expenditure for *i*th student per year. Student expenditure can be divided into two: T = expenditure on tuition (including extra books other than compulsory text books), and NT = expenditure on other than tuition.
- e_i = unmeasured factors influencing student performance.

The regression model was estimated by ordinary least squares technique. It was applied to a total of 1,742 observations. We have presented the results of four estimated equations in Table 5.

As these results show, the dummy variable UR has a very significant effect on student performance. In other words, as generally expected, urban students tend to perform better than rural students. However, the estimated coefficient of the dummy variable MF is marginally significant; that is, its effect on student performance tend to indicate that female students on average perform slightly better than male students, but its overall effect is not strong. Quite contrary to most expectations, the insignificance of BN dummy means that there is no difference in PMR performance between bumiputera and non-bumiputera students.

The results in general show the strong effects of total schooling expenditure on student performance. Positive coefficient on the log of total schooling expenditure (0.205, $t = 12.2$) in equation 1 supports the findings that schooling children who benefit from higher educational expenditure tend to achieve higher examination results, holding the other factors that influence student achievement constant. Interpreted in the usual fashion, the slope coefficient of 0.205 suggest that if the total schooling expenditure increases by one per cent, the student grade point (on 5-point scale) would on the average increases by 0.2 per cent. If we were break up total schooling expenditure into expenditure on tuition (including extra reading materials) and ‘others’, we found in equations 2 to 4 that the log of expenditure on tuitions has a positive and significant relation with log PMR exam results (the coefficient being more than 0.09 and $t > 13$). The influence of (log) tuitions expenditure on student achievement is stronger that (log) ‘other’ expenditure. In equations 2 to 4, the log of expenditure on ‘others’ was also found to have a positive and significant relationship with student performance but with coefficients less than 0.09 and t -value less than 5.

Table 5: Regressions for PMR Results

Explanatory Variables	Equation 1	Equation 2	Equation 3	Equation 4
UR (Urban-Rural)	0.1246 (13.449)	0.1250 (13.737)	0.0123 (13.441)	0.1185 (16.060)
MF (Male-Female)	-0.0266 (-3.163)	-0.0168 (-2.006)	-0.0144 (-1.715)	-0.0177 (-2.132)

BN	0.0162	0.0090	0.0207	0.0108
(Bumiputera-Others)	(1.456)	(1.296)	(3.051)	(1.580)
Log X (Expenditure)	0.2053 (12.197)			
Log T (Tuition + Books)		0.0948 (14.118)	0.0952 (14.105)	0.0912 (13.656)
Log NT (Non-Tuition)		0.0857 (4.904)	0.0784 (4.405)	0.0654 (3.706)
PE (Parents Education)	0.0281 (7.153)	0.0373 (10.753)		0.0271 (7.070)
Log PY (Parental Income)	0.0757 (5.684)		0.1185 (10.030)	0.0775 (5.957)
R squared	0.3403	0.3575	0.3522	0.3704
R-bar squared	0.3381	0.3553	0.3500	0.3678
F-statistic	149.1932	160.8986	157.2419	145.724
SE	0.17079	0.16856	0.16925	0.16691

Notes: The dependent variable is the average score of five PMR subjects (Mathematics, Science, English, Malay and History). Each equation has a different constant term (not reported). Values of t-statistics are shown in parentheses.

The results also suggest that higher schooling expenditure by parents was positively related to parental income, where the correlation coefficient (r) between total expenditure and parental income was estimated to be 0.34. The general pattern is that socioeconomic factors (in the sense of better educated and higher income families) enhance educational outcomes. We found that both the level of parents' education and (log) parental income enter significantly at a 1% confidence level to explain the PMR examination results. However, the role of mothers – as represented by two variables, dummy inputs (working mothers) and education status of mothers – the results of which are not reported, turns out not significantly related to student performance.

CONCLUSIONS

This research into schooling cost in secondary National Schools, both in urban and rural areas, promises some payoffs.

In policy dimensions the results do generally conform to what was expected.

1. Parents with higher socioeconomic status, as reflected by higher income and educational attainment, tend to spend more on their children's education
2. Sufficient expenditure on education, particular on extra tuitions and books, matters as it would likely produce students with better educational outcomes.

The evidence underscores the importance of spreading the availability of schooling and learning facilities to all. Providing sufficient financial assistance such as subsidies and scholarship for poor students should continue to be very high on policy agenda. Another aspect that deserves an in-depth study is the role of extra tuitions by subject in influencing the performance of students according to subject.

If a policy simply enables all students to stay in school but lacks accessibility, equity and the capacity to strengthen the delivery system, poorer students will only get the returns associated with year of schooling and not with quality. Thus, their rate of return on their investment in schooling will not be as high as their richer students. This will not help to reduce the performance gap between the haves and have-nots or between rural and urban students.

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