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The Determinants of Demand for Education among Households in Malaysia

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Abstract: Now-a-days to be deemed as a competent worker requires qualifications and additional skills in order to be competitive, especially in this age of globalization. Since, competition is essential and the requirements of labour have now changed, this study aims to examine the determinants of the demand for education among the households in Malaysia by considering parents' awareness of the impact of globalization. In this study in addition to the variable of demand for education, another useful variable that is considered is the indicator of educational expenditure which represents globalization. In other words, the indicator of educational expenditure is examined to analyse the expenditure on education in the age of globalization. This study utilizes data from a household survey. The determinants of demand for education include the characteristics of parents or households background such as parents' income and educational level of parents and the information of indicators for educational expenditure due to the impact of globalization. Furthermore, the parents' awareness of globalization in respect of their children's education is also investigated. The results of the study show that most variables of parents' characteristics are significant with educational expenditure. These include the variables of household income, mother's work status, job category of head of household and educational level of head of household. Remarkably, the variable of parents' awareness concerning the impact of globalization is also positive and significantly affects expenditure on education among the households. This study reveals that transformation in the Malaysian educational system has changed the household behaviour of attempting to provide better education for their children, especially to meet the requirement of increased competition in this age of globalization.

Key words: Educational system transformation, demand for education, educational expenditure, Malaysian household, globalization, competition, Malaysia

INTRODUCTION

The expenditure on education has changed among the households since demand for education has been transformed by globalization. With globalization, the requirements for workers will be more stringent, meaning that competent workers will become more important, especially in fighting for a job with the tight labour market. Moreover, the element of competence is not only based on the level of education as additional skills such as those of ability or soft skills are necessary for workers in order to be highly skilled and more competitive. The more globalized the sector of the economy, the more competent the worker required. As a result, students of school level not only have to learn certain basics but also have to become creative, innovative, flexible and be able to find new solutions to new problems (Stern, 1992) which will generate human capital that is knowledge oriented in accordance with the knowledge economy required by globalization.

In Malaysia after independence, the government realized the importance of having a common education for all to achieve national unity (Abu Hassan, 2008; Mok, 2009; Hussin, 2002). Education has becomes an important means of economic development to curb the issue of economic imbalance in ethnic groups in such a way as to be a mechanism to eradicate poverty as well as bridge disparities between geographical location and among races (Mok, 2009; Hussin, 2002). The transformation in the system of education attempts to satisfy the needs of the labour market requirements. Science and technical subjects have been given more emphasis to produce a skilled workforce while technical and vocational education has also been acknowledged as being important with the establishment of the Technical and Vocational Education Division in 1964 (Abu Hassan, 2008).

Drastic changes are taking place in Malaysia's educational system with the development of Information Communication Technology (ICT). ICT was incorporated into the educational system through the establishment of

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smart schools and an effort was made to equip schools nationwide with ICT facilities. Moreover in the 1st decade of the 21st century, globalization and the accelerating development of ICT dominated the development of the national educational system. Malaysia needs to produce human capital that is knowledgeable, competent and globally competitive (Abu Hassan, 2008). Pre school and primary school education are essential in developing human capital from an early age. For tertiary education, the Ministry of Higher Education (MOHE) prepared the National Higher Education Strategic Plan in 2007 to fulfil the demand for knowledge workers which is essential to meet the challenges of globalization. This plan includes steps to widen access and increase the equity of higher education, improve the quality of teaching and learning in Higher Education Institutions (HEIs), enhance research and innovation, strengthen HEIs, intensify internationalization, enculturation of lifelong learning and reinforce the delivery systems of the Ministry of Higher Education (MOHE, 2007). The establishment of HEIs in Malaysia has been categorized as public HEIs, private HEIs, polytechnics, community colleges and institutions or centres for skill development (Abu Hassan, 2008; MOHE, 2010).

The motivation for this study is to investigate the demand for education among households in Malaysia since the system of education has undergone a massive transformation from pre-school until the tertiary level. To address the issue of transformation in the education system, this study takes into account certain indicators that can highlight globalization which are grouped into the household awareness of globalization. The globalized economy has transformed the structure of the labour market in terms of labour requirements to meet the needs for skills (including soft skills), be innovative and creative as well as competitive while the mobility of workers has become a focal point in the global economy.

With regard to this issue, the objective of this study is to identify the determinants of demand for education among the households in Malaysia. This is analysed by examining the total expenditure on education by Malaysian households that involves children from pre-school, primary school, secondary school, high school or equivalent up until the tertiary level of education. The basic variables that explain the demand for education are selected from the human capital theory of demand for education and an additional variable awareness of globalization provides a useful insight for this study.

Literature review: Past studies have analysed the determinants of demand for education including public and private education. In addition, some past studies have given special attention to the demand for education at the tertiary level, private schooling and private tutoring. This is because parents realize that education is an asset in modern society and invest to the extent of their financial means in schooling for their children. Most of the results from past studies have concluded that there are two generally accepted factors affecting demand for education. First, income and employment expectations related to the level of education. Second, the characteristics of the family background of each potential student household income, parental education attainment, parental occupation, gender of student, number of siblings and rural or urban residence.

Income is one of the most important factors that affect most human social and economic decisions. This is confirmed by the number of studies in which a positive relationship exists between household income and schooling of children (Behrman and Wolfe, 1984; Wolfe and Behrman, 1984; Birdsall, 1985; Alderman *et al*., 1997; Behrman and Knowles, 1999). Another study focused on the question of how much households were willing to pay for improvement to the quality of local public education among the households in two areas of a rural school district in Pennsylvania (Stair *et al*., 2006). The results of the study indicated that higher income households and households with children currently in public school are more willing to pay for school improvement. Similarly, Glewwe and Jacoby (2004) also obtained a significant result of the relationship between changes in income and demand for education in Vietnam however a different set of data was used for the study. The study utilized panel data for households and consumption expenditure was used as a proxy for household income.

Characteristics of family background variables such as school choice are highly associated with parent's occupational status (Gloman and Ravikumar, 1992). Parents with higher occupational status prefer private schools more than public schools for their children. However, households with an income below the average prefer public education. The study also revealed that the parental satisfaction of school choices for children in private education and return from private education is higher. Rehman *et al*. (2010) also conducted a similar study on the determinants of parental choice in the selection of public or private schools in Pakistan. The study concluded that size of family, parental education, income of parents, qualification of teachers, school performance and dissatisfaction with particular schools are the major factors that affect parental choice regarding the selection of public or private schools in the study area.

Most parents intend to provide their children with the best possible educational environment. Their decision to invest in their children's education depends on the social, cultural and economic factors and can be determined by examining private tutoring expenditure as the demand for education (Tansel and Bircan, 2006; Kim and Park, 2010). The results from Tansel and Bircan (2006)'s study showed that total expenditure which is a proxy for income is significantly and positively related to private tutoring expenditure. Both years of education of heads of households and mothers' years of education were found to be important determinants with a larger effect for mothers' education than that of the fathers' education. Demand for private tutoring increases at a decreasing rate with the household head's age and age squared, implying life cycle considerations. The costs of education are likely to peak around upper middle age when the heads of households are likely to have children of higher school grade level. The results of a recent study which also examined the determinants of demand for private tutoring found that students' achievement level, household income and parents' educational level were positively associated with a higher demand for private tutoring in South Korea (Kim and Park, 2010).

For tertiary education, the characteristics of family background are also considered essential in the demand for tertiary level education. Family characteristics are important elements in the demand for higher education in Spain, especially the mothers' educational attainment which is even more of a determinant than that of the fathers. The coefficient of mothers' schooling in the girls sample increased with the level of schooling, implying a larger impact of mothers' education at the high school level than at the primary level. However, the boys sample showed that the effects of parental education remained about the same at different levels of parental schooling (Albert, 2000). Beneito *et al.* (2001) investigated the household demand for both secondary and university education using an estimation of the opportunity cost associated with the decision to invest in education. Comparatively, the social and economic status of the family has a greater impact on household expenditure on secondary education than on university education. The opportunity cost is also shown to be a decisive variable in the decision to invest in secondary education, although the results are less conclusive in the case of university education.

Another study examined the effects of student achievement by analysing the determinants of educational attainment. Tansel (2002)'s study examined the determinants of educational attainments of boys and girls in Turkey at the primary, middle and high school levels. Individual and household factors such as household income, parental education and occupation and a rich array of community characteristics are considered. The results of the study indicate that schooling attainment has a strong relationship with household permanent income thereby implying that schooling is a normal good and that households are resource constrained in that higher incomes lead to higher schooling attainments. The effect of income on the schooling attainment of girls was larger than that of boys in all three schooling levels. Furthermore, parental education was also found to be strongly related to schooling attainments for both of them and the effects were larger on girls than on boys. In other study, Birdsall (1985) found that mothers' education is more important than the fathers' education which influences achievement for children's education in high-income countries. However, Behrman and Wolfe (1987) in Nicaragua found that the effects of the mothers' and fathers' education on children's schooling achievements do not significantly differ from each other.

Now-a-days, it is important to take into account the effect of globalization on the demand for education which is due to the high competition in the labour market for relatively few good jobs. In the current debate, education is expected to be the major tool for incorporation into the knowledge society and technological economy. Consequently, the demand for educational expansion has increased. Based on the study by Stromquist (2005), the study reveals two prominent results: first, enrolments are increasing in all levels of education all over the world, except in the poorest countries of sub-Saharan Africa. Second, much of the expansion of education in several countries has taken place through the increased parental share of schooling costs.

MATERIALS AND METHODS

Data and samples framework: The data for Peninsular Malaysia were collected from a survey that covered ten states in Malaysia Selangor, Kuala Lumpur, Perak, Negeri Sembilan, Melaka, Kelantan, Terengganu, Johor, Penang and Kedah. Within each state, a sample of households was randomly selected. A total of 4,000 questionnaires were distributed to the heads of households with a return rate of 97.1%. Questionnaires with incomplete or missing data were not included in the analysis resulting in a total sample of 3,515 questionnaires. As this study requires parents' information only, 206 questionnaires for single parents were not included. This left a total sample of 3,309 questionnaires with no missing values for all variables observed in this study. The parents' information is

important in order to identify the characteristics of family background such as parental educational level and the expenditure on education of the household.

In addition, this survey provides the expenditure per household rather than per child so that researchers have information on the expenditure on education per household. The survey investigated household expenditure on education for the year 2010 and the sampling took place from November, 2010 to April, 2011.

Measures: A validated questionnaire that was used in past research was modified for the purpose of this study. The questionnaire is composed of three parts. Part one consists of information concerning the characteristics of family background and household information in which the variables relate to the demand for education. Part two covers the soft skills requirements and the additional skills relate to education as well as to highlight household awareness concerning the demand for education in this age of globalization.

Descriptive statistics and variables: Table 1 shows the descriptive statistics of the explanatory and dependent variable. Table 1 shows the mean value, standard deviation, minimum and maximum value for all variables examined in this study. The dependent variable is the household average percentage of monthly expenditure on education during the year 2010. There are four scales of household expenditure out of household income: ≤20, 21-25, 26-30 and >30%. Educational expenditure in this model takes into account all expenses on education. This includes the expenses for private tutoring (tuition fee) and all expenses regarding education in general. It is transformed to the absolute figure to make it appropriate with the Ordinary Least Squares (OLS) analysis. The independent variables in this study are classified into two groups:

Table 1: Descriptive statistics of the sample

Variables	Mean±SD	Min.	Max.
Age of head of household	43.54±10.24	21.00	78.00
Age of mother	40.32±9.550	18.00	74.00
Natural log of household income	8.17±0.810	5.30	10.30
Years of schooling of head of household	11.94±3.280	0.00	17.00
Years of schooling of mother	11.88±3.140	0.00	17.00
Dummy variable of occupational category of head of household	0.27±0.440	0.00	1.00
Dummy variable of sector for occupation of head of household	0.35±0.480	0.00	1.00
Dummy variable of work status of mother	0.52±0.500	0.00	1.00
Dummy variable of medium level for education of head of household	0.49±0.500	0.00	1.00
Dummy variable of high level for education of head of household	0.39±0.490	0.00	1.00
Dummy variable of medium level for education of mother	0.51±0.500	0.00	1.00
Dummy variable of high level for education of mother	0.38±0.480	0.00	1.00
Number of children of schooling age to tertiary level	2.68±1.320	1.00	6.00
Parental awareness of globalization	5.39±0.990	1.00	7.00
Natural log of household average nonthly expenditure on education	6.48±0.900	3.69	9.07

SD = Standard Deviation

- The parental profile and household background. In this part, the parental and household information related to demand for education are taken into consideration
- Household awareness of globalization which consists of indicators of educational expenses that represent globalization

First, the parental profile and household background variables include age and age squared of the household head, mother's age, household income, occupational category of household head which is a binary variable (1 = professional, 0 = non-professional), sector of occupation of household head is also a binary variable (1 = government sector, 0 = private sector), parental level of education and number of children (from at schooling age to tertiary level). Furthermore, the variable of parental education is classified into two by the level of education and years of schooling for the purpose of observing the effect of parental education on the demand for education. First, researchers compare both high and medium level of education with the primary level of education. In this study, parental level of education is a binary variable to the present level of education of primary, secondary and equivalent and high level attainment (0 = primary level of education and 1 = for secondary and equivalent and high level of education). Second, this study has transformed parental level of education into years of schooling. In this study, researchers classified that 14 years of schooling and above for a degree level, 11-13 years of schooling for secondary school and high school (which is equivalent to diploma level) and 6 years of schooling and below for primary school. Another variable is the work status of mothers which is also a binary variable (1 = working, 0 = not working).

Second, the presence of globalization is chosen based on parental awareness concerning the soft skills requirements. The purpose of this variable is to examine the influence of globalization on the demand for education among the households. In this study, researchers have identified the element of soft skills into information technology and communication skills (ICT); computer; foreign language, especially English communication; arts

and other skills such as music, sports and other performance skills. Based on these elements, parental awareness of globalization is ranked using seven scales based on a Likert scale from one (strongly disagree) to seven (strongly agree). The mean value for all indicators of soft skills that are above average is taken into account to represent the variable of parental awareness of globalization.

Model specification: This study utilizes the linear model of OLS which is expressed in the general form in the Eq. 1:

$$EdExp = f(Age_{hh}, Age_{hh}^2, Age_m, Inc_{hh}, Edu_f, Edu_m, Occ_{hh}, So_{hh}, Mw_s, Aw_g, Nc) \quad (1)$$

Where:

EdExp = Household average monthly expenditure on education
Age_{hh} = Age of head of household
Age_{hh}^2 = Age of head of household squared
Age_m = Age of mothers
Inc_{hh} = Household income
Edu_f = Level of education/years of schooling by father
Edu_m = Level of education/years of schooling by mother
Occ_{hh} = Occupation category of head of household
So_{hh} = Sector of occupation of head of household
Mw_s = Work status of mother
Aw_g = Parental awareness of globalization
Nc = Number of children

The specific model of demand for education can be expressed by educational expenditure which is presented in two equation forms as follows:

Model 1 shows the variable of parental education by level of education:

$$EdExp = \alpha + \beta_1 Age_{hh}^2 + \beta_2 Age_{hh} + \beta_3 Age_m + \beta_4 Inc_{hh} + \beta_5 Medu_f + \beta_6 Hedu_f + \beta_7 Medu_f + \beta_8 Hl_m + \beta_9 Occ_{hh} + \beta_{10} So_{hh} + \beta_{11} Mw_s + \beta_{12} Aw_g, \beta_{13} Nc \quad (2)$$

Model 2 employs the variable of parental education by years of schooling:

$$EdExp = \alpha + \beta_1 Age^2_f + \beta_2 Age_f + \beta_3 Age_m + \beta_4 Inc_{hh} + \beta_5 Ysc_f + \beta_6 Ysc_m + \beta_7 Occ_{hh} + \beta_8 So_{hh} + \beta_9 Mw_s + \beta_{10} Nc + \beta_{11} Aw_g \quad (3)$$

In addition to the variables in model 1 and 2, researchers define:

Ysc_f = Years of schooling by father
Ysc_m = Years of schooling by mother
$Medu_f$ = Medium level of education by father
$Hedu_f$ = High level of education by father
$Medu_m$ = Medium level of education by mother
$Hedu_m$ = High level of education by mother

RESULTS AND DISCUSSION

Table 2 shows the percentages of the parents by income quartile and educational expenditure as a proportion of total income. The percentage of households who devote 1-25% of their total income to educational expenditure ranges from approximately 55% for the 1st income quartile (the lowest quartile) to approximately 79% for the seventh income quartile (the highest quartile). In other words, a substantial percentage of households (55-79%) allocate 1-25% of their monthly income on educational expenditure for their children. In the sample, the share of educational expenditure in total monthly income ranges from 25-30% and >30%, respectively for 9-22% of households across all income quartiles.

The percentage of households declines relatively with a higher share of educational expenditure across all income quartiles. Furthermore, the percentage of households also declines as the incomes of households increase. This result is quite similar with the findings of Bray and Kwok (2003) who found that most households in Hong Kong spend about 1-15% of their monthly incomes on private tutoring. However, it is different in terms of the high percentage of expenses in that there were no households who spend >20% of their income on private tutoring.

Table 3 shows the percentage of educational expenditure by parental level of education. In terms of parental educational level, this study indicates that about 50% of the sample has an education of secondary school level. Researchers observe that as the level of education

Table 2: Percentage of households by income quartiles and proportion of educational expenditure by total monthly income (%)

Percentage of educational expenditure as a percentage of total monthly income	Category of income						
	1st quartile N = 318	2nd quartile N = 780	3rd quartile N = 998	4th quartile N = 604	5th quartile N = 359	6th quartile N = 174	7th quartile N = 76
<20	23.6	32.3	36.7	33.9	33.1	33.9	25.0
20-24.9	32.1	30.6	33.5	40.7	37.3	39.7	53.9
25-29.9	22.3	19.4	17.2	14.2	15.3	15.5	11.8
≥30	22.0	17.7	12.6	11.1	14.2	10.9	9.2

1st quartile: ≤1000; 2nd quartile: 1001-2500; 3rd quartile: 2501-5000; 4th quartile: 5001-7500; 5th quartile: 7501-10,000; 6th quartile: 10001-15000; 7th quartile: ≥15001

Table 3: Percentage of households with educational expenditure by parent's level of education

	Percentage of educational expenditure (%)				
Level of education	<20	20-24.9	25-29.9	≥30	Total
Father					
Others	9 (36.0)	5 (20.0)	6 (24.0)	5 (20.0)	25 (0.8)
Primary school	97 (26.4)	130 (35.4)	67 (18.3)	73 (19.9)	367 (11.1)
Secondary school	517 (31.9)	558 (34.4)	300 (18.5)	248 (15.3)	1623 (49.0)
High school/diploma	216 (33.9)	233 (36.6)	108 (17.0)	80 (12.6)	637 (19.3)
Degree and above	256 (39.0)	239 (36.4)	90 (13.7)	72 (11.0)	657 (19.9)
Total					3309 (100.0)
Mother					
Others	7 (41.2)	2 (11.8)	-	8 (47.1)	17 (0.5)
Primary school	95 (26.4)	129 (35.8)	70 (19.4)	66 (18.3)	360 (10.9)
Secondary school	495 (29.4)	602 (35.8)	320 (19.0)	265 (15.8)	1682 (50.8)
High school/diploma	239 (36.8)	221 (34.0)	109 (16.8)	81 (12.5)	650 (19.6)
Degree and above	259 (43.2)	211 (35.2)	72 (12.0)	58 (9.7)	600 (18.1)
Total					3309 (100.0)

Others include those received an informal education

Table 4: Result of model estimates

	Model 1		Model 2	
Variables	Coefficient (β)	SE	Coefficient (β)	SE
Constant	0.389 (12.002)***	0.032	0.388 (12.062)***	0.032
Log household monthly income (Inc_{hh})	0.932 (46.008)***	0.003	0.933 (46.393)***	0.030
Age of head of household (Age_f)	0.007 (5.469)***	0.001	0.008 (5.994)***	0.001
Age of head of household squared (Age_f^2)	-7.715^{-5} (-5.311)***	0.867^{-5}	-8.448^{-5} (-5.953)***	0.857^{-4}
Age of mother (Age_m)	0.001 (2.095)**	0.000	0.001 (2.013)**	0.000
Years of schooling of head of household (Ysc_f)	-	-	0.001 (1.166)^{NS}	0.001
Years of schooling of mother (Ysc_f)	-	-	-0.001 (-1.367)^{NS}	0.001
Dummy variable for head of household medium level of education ($Medu_f$)	0.011 (1.490)^{ns}	0.008	-	-
Dummy variable for head of household high level of education ($Hedu_f$)	0.015 (1.840)*	0.008	-	-
Dummy variable for mother medium level of education ($Medu_m$)	0.007 (0.770)^{NS}	0.009	-	-
Dummy variable for mother high level of education ($Hedu_m$)	0.000 (-0.027)^{NS}	0.010	-	-
Dummy variable for work status of mother (Mw_s)	-0.005 (-1.625)*	0.003	-0.005 (-1.832)*	0.003
Dummy variable for occupation of head of household (Occ_{hh})	0.008 (2.619)*	0.003	-0.003 (-0.718)^{NS}	0.004
Dummy variable for sector of occupation of head of household (So_{hh})	-0.002 (-0.517)**	0.004	0.009 (2.828)**	0.003
Number of children (Nc)	0.010 (9.359)***	0.001	0.010 (9.301)***	0.001
Parental awareness of globalization (Aw_g)	0.008 (4.826)***	0.002	0.007 (4.690)***	0.001
R^2	0.729	-	0.728	-
Adjusted R^2	0.727	-	0.727	-
F-statistics	360.341***	-	424.337 ***	-
Number of observations	3309	-	3309	-

Figure in parentheses is t value of coefficient β; ***Significant at level 0.01; **Significant at level 0.05; *Significant at level 0.10; ^{NS} Not Significant

of parents increases, the percentage of households also increases for educational expenditure ranging from <20% and from 20-25%. However, this study shows that the expenditure on education decreases for the expenditure on education ranging from 25-30% and >30% across all levels of parents' education.

Table 4 shows the results of the estimated coefficients of the multiple regression models based on Eq. 2 and 3. The results from model 1 and 2 are deemed to fit with the model if the Variance Inflation Factor (VIF) value is <5 which indicates that all the explanatory variables are free from the problem of multicollinearity. The test of multicollinearity is to verify that each regressor is not highly correlated. In addition, the weighted least squares also show that each explanatory variable and dependent variable in the model has no disturbance term. This is to confirm that all the variables are normally distributed and free from heteroscedasticity. For model 1, the R^2 value is reported as 0.729 which means that 72.9% of the variables estimated in this study are explained by the explanatory variables. The adjusted R^2 is reported as 0.727 which accounts for 72.7%. Similarly, the R^2 value for model 2 accounts for 72.8% (R^2 value = 0.728) and the adjusted R^2 value is the same as in model 1.

Since, educational expenditure and monthly income are in log form, the estimated, β coefficient on household income can be interpreted as the income elasticity of demand. The β coefficient is estimated at 0.932 and 0.933 for model 1 and 2, respectively. As household income increases by 1%, educational expenditure also increases by approximately 1%. As a result, researchers can conclude that educational expenditure has a unitary elasticity indicating that it is neither a necessity nor a luxury item in the consumer's budget. This result is consistent with an earlier study reporting that income

elasticity has unit elasticity in Turkey (Tansel and Bircan, 2006) but differs with income inelasticity of private tutoring expenditure in Greece and Vietnam (Psacharopoulos and Papakonstantinou, 2005; Dang, 2007). These two studies reveal that tutoring expenditure is a necessity in the consumer's budget. This difference may be attributable to the different samples used. Psacharopoulos and Papakonstantinou (2005) used OLS but drew samples from among current university students while this study, similar to the studies of Tansel and Bircan (2006) utilized households as the sample.

Household income is positively correlated with educational expenditure with a positive sign. The variable is statistically significant at the 1% level of significance for both models. This is confirmed by a number of studies in which a positive relationship exists between household income and schooling of children (Behrman and Wolfe, 1984; Wolfe and Behrman, 1984; Birdsall, 1985; Alderman *et al*., 1997; Behrman and Knowles, 1999). Similarly, Glewwe and Jacoby (2004) also obtained a significant result for the relationship between change in income and demand for education in Vietnam, however a different set of data was used for the study. The study utilized panel data for households and consumption expenditure was used as a proxy for household income. Some past studies that investigate the private tutoring expenses also obtained similar results that income is significantly correlated with educational expenditure (Tansel and Bircan, 2006; Kim and Lee, 2010).

The age and age squared of head of household are both statistically significant at the 1% level of significance with positive and negative signs, respectively as expected as was also found by Kim and Lee (2010) in Korea. This implies that educational expenditure increases with the age of the head of household at a decreasing rate. This result is consistent with the life cycle expenditure pattern of the head of household. Educational expenditure is likely to peak around upper middle age when the head of household is likely to have higher school grade level children.

The years of education of head of household and mother are statistically not significant with positive and negative signs, respectively. The level of education among the heads of households correlated positively but is not significant while the years of education of mothers are negatively correlated with educational expenditure. However, parents with a lower education level seem to expend relatively more on their children's education. This differs from past studies which found that parental years of schooling are positively correlated with a higher demand for private tutoring expenditure. The studies examined parental educational level with expenditure on private tutoring which is relatively more expensive and involves preparation for the university entrance examination (Tansel and Bircan, 2006; Kim and Lee, 2010). It has to be noted that this study examines expenditure on an overall expenditure on education while other studies only considered the expenditure of private tutoring for hiring good teachers for children to sit an entrance examination.

The findings that the years of schooling of the head of household and mother does not significantly affect educational expenditure were further analysed by examining in terms of the level of education into secondary and higher level education which are indicated by dummy variables. The results show that heads of households with higher level education are statistically significant with a positive sign at the 10% level of significance compared to primary level education as a control variable. It can be concluded that a year of increase in the higher level education of the heads of households increases the educational expenditure by about 6% more than primary level education. However, mother's level of education, both for secondary and higher level education is not statistically significant in the results.

The work status of mothers is also indicated by a dummy variable. It is important to note that this study only takes into account those households with a married status and single parent for both mother and father were excluded from this study. This was to capture all the information of parents during the analysis. The results of the work status of mothers indicates a positive sign and significantly affects the educational expenditure. It is expected that children in families in which mothers are working would be more likely to receive outside tutoring/tuition classes, not only because mothers have less time to supervise their children but also because family incomes are likely to be higher. In contrast, this variable was not significant in Tansel and Bircan (2006), and Kim and Lee (2010)'s studies. The results from Tansel and Bircan (2006)'s study show that whether the mother works or does not work, it does not significantly affect the expenditure of private tutoring. However, those households where the mother is single spend more on private tutoring expenditure in Turkey while Kim and Lee (2010) found the opposite around in Korea.

Both, the occupational category of the head of household whether professional or non-professional and sector of occupational category whether in the government or in the private sector are indicated by dummy variables. Although, both variables have a

positive sign, the professional category of the head of household is not statistically significant while the head of household in the government sector shows that the coefficient estimate of this variable is statistically significant. Households that work in the government sector have a larger positive impact on educational expenditure compared to those that work in the private sector. The number of children is statistically significant with a positive sign. The average number of children is 2.68 among the households (Table 1). An increase in the number of children is found to increase expenditure on education. However, studies by Tansel and Bircan (2006) and Kim and Lee (2010) found that an increase in the number of children reduced private tutoring expenditures. This is in contrast to the finding that the number of children is positively correlated with educational expenditure in Malaysia. However, the results cannot be strictly comparable because of the difference in defining educational expenditure. This is because both past studies actually studied the private tutoring expenditure which focuses on student university entrance examination. Further, it is noted in their study that expenditure on private tutoring is expensive and usually beyond the reach of a household with average income while the study takes into account all the expenditure on education which includes fees for the tuition classes but not for private tutoring of university entrance examination.

Since, this study attempts to capture the impact of globalization which might affect the expenditure on education among households, it is useful to examine the parental awareness of globalization. This variable is statistically significant with a positive sign at the 1% level of significance. This implies that expenditure on education increases with the increase in the parental awareness of the impact of globalization. As mentioned before, apart from basic knowledge from school, globalization requires students/workers with soft skills in order to be more competitive in the labour market. This is because the requirement of labour in the age of globalization is always associated with the high skill requirements of labour, job competition in the labour market, labour mobility and competent labour which concerns experts with soft skills. Based on the results, this study reveals that expenditure on education among the households in Malaysia changes as expected when the parents are more concerned with the aspect of competition resulting from globalization.

Households in Malaysia are concerned about the educational attainment of their children. Therefore, apart from general expenditure on education, private tutoring proved to be important for children in such a way to enhance skills in numeracy and English language. Furthermore, private tutoring is essential to overcome the problem of weakness in certain subjects. This starts from the primary school between the ages of 7 and 12 years and secondary school level from 13-17 years. Parents sent their children to centres for private tutoring, however now-a-days, the concept of home tuition has become more popular and is demanded by households. For pre-school children, the households send their children to private centres as early as 4 and until 6 years old. Some skills are compulsory for children at the preschool level to acquire the basic skills of literacy and numeracy as preparation to enter primary school level. At this age, students are provided with basic communication skills, critical and creative thinking skills as well as being instilled with moral values.

This study has examined the determinants of expenditure on education by using the OLS Model. As the samples are parents, this study uses parental income to represent the household income. Household income is significantly and positively related to expenditure on education. The results imply that elasticity is almost one indicating that expenditure on education among the households in Malaysia has approximately unitary elasticity. This shows that the demand for educational expenditure is neither a luxury nor a necessity item in the household budgets. Educational expenditure increases at a decreasing rate with the age of the head of household implying life cycle considerations.

The years of education of the head of household and the mother are not statistically significant. This implies that households with lower educational level are more concerned with their children's education which leads them to spend more on their education. However by using a dummy variable to classify the level of education, the educational level of fathers is also found to be an important determinant of educational expenditure at the higher educational level. The effect of a working mother on educational expenditure is statistically significant. This implies that family income has increased to support additional private tutoring and other expenditure on education in such a way that the mother has less time to supervise her children. The globalization effect may influence household expenditure on education as well. Moreover, this variable is statistically significant which indicates that households are aware of an economic change resulting from globalization.

There is no statistical difference between professional heads of households and non-professional heads of households in terms of educational expenditure. This implies that non-professional heads of households

regardless of their job category spend significantly larger amounts on the educational expenditure of their children. Furthermore, heads of households in the government sector have a larger impact on educational expenditure compared to those who work in the private sector. This highlights that those who work in the government sector are relatively more conscious of their children's educational attainment which positively increases educational expenditure. Finally, the number of children is statistically significant.

CONCLUSION

The findings show that the number of children is positively correlated with educational expenditure. This difference is attributable to the difference in defining educational expenditure which takes into account all the expenditure on education. It has to be noted that education is important for all Malaysian households and this has been a major part of the responsibility for the government. This study sheds light on the determinants of demand for educational expenditure as a whole.

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