mothers had only primary schooling. The occupations of both the parents are low on the social scale (majority of the mothers are housewives). Students who wished to continue generally come from families with smaller number of siblings as compared to those who wished to stop schooling. In terms of academic achievement, students who wished to continue are influenced by their form four grades, 64.1 percent obtained Grade 1 or 2 while among those who wished to discontinue, 63.7 percent obtained Grade 3 or failed. Students are not affected by the PMR results.

The study also found other motivational key factors such as parental encouragement and expectations, and the greatest influence in the lives of the students. Most parents encourage and expect the students to continue education and the greatest influence in the lives of the students is the mother irrespective of gender, ethnic groups or income groups.

Clearly, many factors affect a student's decision to continue schooling as well as his/her choice of educational stream. It is clear that many factors exert an influence on students' decision to further their education or not to. To identify the key factors, the decisions and choices of the students will be analyzed by means of logistic regressions based on the educational

choice model described in chapter 3 and summarized in Figure 3.1. This part will analyze the quantitative factors as specified by Marceau (1979). The qualitative factors are not included in the logistic analysis because these factors are subjective in nature (such as parental ecouragement and expectations). The analysis will be done in parts. Firstly, the overall sample will be examined. After which, the analysis will be done separately by gender, by location (urban and rural) and according to the ethnic groups. This is to study whether gender, location and ethnicity have any bearing on the educational decision and choice of the students (Figure 3.1).

The problem is to predict whether a student will continue schooling (further his education). In this context, the dependent variable **'CONTINUE'** is given the value of 1 if the student indicates a desire to continue his/her schooling and 0 otherwise. In order to study the factors which influence the students' educational choice in terms of the science and technical or the arts and social sciences, a logistic regression is taken. The dependant variable **'SAT'** takes the value of 1 if the student chooses the science and technical field and 0 if the student chooses the arts field. The students' desired occupations in the science and technical or arts fields are taken as a proxi for

students' science and technical or arts choices ('SAT').

6.2 The explanatory variables / independent variables[1].

Following Marceau (1979), the independent variables are grouped into four major categories: psychological or individual, structural or institutional, social or familial and economic or financial.

6.2.1 Psychological or individual.

The importance of sex-role stereotyping cannot be ignored. **SEX** is considered a surrogate factor that relates to the **CONTINUE** decision via the transmission of sex-role stereotypes. Boys are expected to do better, have higher aspirations and a stronger propensity to continue studies for bread-winning purposes than girls. However, in this sample of students it was found that more girls than boys prefer to continue education while more boys wished to enter the labour market. The variable **SEX** takes the value 1 if the respondent is male and 0 otherwise, and is expected to correlate negatively with the continue decision.

[1] For a brief review on variables and arguments in past studies, see Psacharopoulos G. (1979, 1982), and Soumelis C. (1981).

6.2.2 Social or familial.

FOCC and **MOCC** are discrete variables representing the occupations of the fathers and mothers based on the *Dictionary of Occupational Classification (DOC)* by the Ministry of Human Resource and Manpower. The occupations are converted into numerical units according to the *Standard International Occupational Prestige Scores following* Treiman (1975). The higher the numerical value the better the prestige level of the parents. These variables are included to test if the decision to **CONTINUE** is significantly influenced by parents' occupational prestige. It is hypothesized that both parents' occupation will correlate positively with the decision to continue.

FEDU and **MEDU** are also discrete variables representing the educational level of the student's father and mother respectively. They are classified as follows:

1 = HSC, College and above

2 = MCE or upper-secondary education

3 = SRP or lower-secondary education

4 = Primary education and below.

The basic hypothesis is that parents who are better

educated tend to push their children towards higher educational attainment. **FEDU** and **MEDU** variables are expected to correlate negatively with the decision to continue.

SIB is a discrete variable indicating the number of children in the family. It is expected to correlate negatively with the dependent variable.

6.2.3 Structural or institutional.

GPMR and **GRADE** are two discrete variables denoting lower secondary and form four school grades, that is grades obtained at the **PMR** and the most recent form four examination, respectively. The detailed breakdown of **GPMR** and **GRADE** are as follows:

GPMR : 1 = More than 6 distinctions
2 = 4 - 5 distinctions
3 = 1 - 3 distinctions
4 = less than 1 distinction

GRADE : 1 = Grade 1
2 = Grade 2
3 = Grade 3
4 = Fail

The lower the numerical value of the grades the better the results obtained in both cases. These are expected to correlate negatively with the dependent variable.

SCIENCE is also inserted to test whether enrolment in the science stream has a significant influence on the decision to continue schooling. **SCIENCE** is a 0-1 dummy variable taking unit value if the respondent is in the science stream, and 0 otherwise. **SCIENCE** is expected to correlate positively to the decision to continue.

6.2.4 Economic or financial factors.

Financial considerations can influence the decision to continue in several ways. This is partly because students from well-to-do families are able to attend private tuition classes in order to improve their academic performance in areas they are weak in. High family income would also mean low marginal utility on money devoted to educational expenditures[2]. Moreover, the family can afford to wait regarding pecuniary contributions from the student to the household. On the other hand, students from low-income families would tend to discontinue their studies at the end of secondary education in order to support themselves and/or their

families. The decision to **CONTINUE** schooling can also be influenced via expected returns from further education.

YFAM is a continuous variable representing family monthly income, that is the sum of father's and mother's incomes. It is expected to correlate positively to the decision to CONTINUE.

YSPM represents the expected earnings after Form Five should the student decide to stop schooling after the SPM examination. This is a continuous variable that is expected to correlate negatively to the decision to continue.

YAGE denotes expected earnings at the age of 26, making an assumption that by then, the student would probably have established his career whether he had continued his studies or not. This is a continuous variable and is expected to correlate positively to the decision to continue.

However, in analyzing the data obtained from the sample of students, it may be found that some of the above variables may be highly correlated with each other resulting in the problem of multicollinearity.

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[2] Assuming that all man have one single objective in education.

Thus, a correlation test among the variables is first taken to determine the variables to be used for the logit analysis. The results showed that **GPMR** is significantly correlated with **GRADE** and with **STREAM**. **FOCC** and **MOCC**, on the other hand, are highly correlated with **FEDU** and **MEDU**, and **YAGE** with **YFAM** (see Table 6.1). To overcome the problem of multicollinearity, the following variables are used for the purpose of our logit analysis as independent

variables: **SEX, FEDU, MEDU, SIB, GRADE, STREAM, YFAM AND YSPM.**

Table 6.1 : Correlations Table

CORRELATIONS	FOCC	MOCC	GPMR	YAGE
FEDU	-0.4885**	-0.4674**	-	-
MEDU	-0.4091**	-0.3264**	-	-
GRADE	-	-	0.5499**	-
STREAM	-	-	-0.4775**	-
YFAM	-	-	-	0.4521**

1-tailed significance : * -0.01 ** -0.001

6.3 The Logistic Regression Analysis (I) : Determinants of The Decision to Continue Further Education.

The relationship between the variable **CONTINUE** and the independent variables is summarized in the equation below:

$$\textbf{CONTINUE} = a_0 - a_1 \textbf{SEX} - a_2 \textbf{FEDU} - a_3 \textbf{MEDU} - a_4 \textbf{SIB} - a_5 \textbf{GRADE} + a_6 \textbf{STREAM} + a_7 \textbf{YFAM} - a_8 \textbf{YSPM}$$

where a_0 to a_8 are constants.

Table 6.2 shows the estimated coefficients of the independent variables obtained by fitting a logistic regression to the above model for the overall sample. In this table and in all subsequent tables, column 2 reports the maximum likelihood coefficients (βi) of the logit estimation:

$$P = \frac{1}{1 + e^{-\Sigma \beta i x i}}$$

Column 2 gives the regression coefficients (B), column 3 the Standard Error (S.E.), column 3 gives the Wald statistics (WALD), column 4 indicates the degree of freedom (df), column 5 the significance level for the Wald Statistics (Sig), column 5 the *R* values and column 6

reports the factor by which the odds change when the independent variable increases by one unit (Exp(B)). The Wald Statistics has an undesirable property in that when the absolute value of the regression becomes large, the estimated standard error also becomes large, and thus produces a small Wald Statistics. This can lead to a failure to reject the null hypothesis when in fact one should.

6.3.1 The Results of the Logistic Regressions

6.3.1.1 Overall Sample

The -2 Log likelihood value for the logistic regression has a chi-square value of 236.782 with a significance of 0.7873 and a Goodness of Fit value of 256.977 with a significance of 0.4535. The observed significance level indicates that this model does not differ significantly from the 'perfect model'. Overall, 79.55 percent of the sample were correctly classified (Table 6.2).

Table 6.2
Explaining the Decision to Continue

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	-1.3667	.3521	15.0687	1	.0001	-.2149	.2550
FEDU	-.6073	.1991	9.3038	1	.0023	-.1607	.5448
MEDU	.2285	.2447	.8720	1	.3504	.0000	1.2568
SIB	-.1651	.0886	3.4708	1	.0625	-.0721	.8478
GRADE	-.2909	.1566	3.4493	1	.0633	-.0716	.7476
STREAM	1.0585	.4643	5.1982	1	.0226	.1063	2.8821
YFAM	.0001	.0002	.6756	1	.4111	.0000	1.0001
YSPM	.0007	.0007	.9841	1	.3212	.0000	1.0007
Constant	3.6965	.9541	15.0095	1	.0001		

	Chi-square	Significance
-2 log likelihood	236.782	0.7873
Goodness of Fit	256.977	0.4535

Total number of cases = 406
Number of case included in the analysis = 264
Percent correctly classified for overall sample = 79.55 %

From the regression, **SEX**, **FEDU** and **STREAM** are found to be statistically significant at the 0.05 level. **SIB** and **GRADE** are significant at the 0.10 level. All have the *a priori* signs.

Taking separate logistic regressions for urban and rural students gave the following results. For urban students, **FEDU** is significant at the 0.05 level of significance while **STREAM** is found to be significant at the 0.10 level of significance. Both have the *a priori* signs (Table 6.3).

Table 6.3 : Explaining the Decision to Continue (among Urban students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	-.6240	.6740	.8572	1	.3545	.0000	.5358
FEDU	-.7296	.3353	4.7340	1	.0296	-.1614	.4821
MEDU	.1568	.4028	.1514	1	.6972	.0000	1.1697
SIB	-.2626	.2527	1.0798	1	.2987	.0000	.7691
GRADE	-.2851	.2577	1.2245	1	.2685	.0000	.7519
STREAM	1.5202	.8645	3.0919	1	.0787	.1020	4.5731
YFAM	.0003	.0002	1.5877	1	.2077	.0000	1.0003
YSPM	.0003	.0013	.0458	1	.8306	.0000	1.0003
Constant	3.9843	1.8078	4.8577	1	.0275		

	Chi-square	Significance
-2 log likelihood	84.418	0.4056
Goodness of Fit	77.629	0.6161

Total number of cases = 190
Number of case included in the analysis = 91
Percent correctly classified for overall sample = 75.82 %

In the regression of the rural students, **SEX** and **FEDU** are significant at the 0.05 level while **GRADE** and **STREAM** are found to be significant at the 0.10 level. All have the expected signs (Table 6.4).

Table 6.4 : Explaining the Decision to Continue (among Rural students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	-1.6146	.4988	10.4784	1	.0012	-.2189	.1990
FEDU	-.6456	.2664	5.8745	1	.0154	-.1480	.5244
MEDU	.2164	.3292	.4319	1	.5110	.0000	1.2415
SIB	-.1724	.1065	2.6196	1	.1056	-.0592	.8417
GRADE	-.3660	.2143	2.9172	1	.0876	-.0720	.6935
STREAM	1.0083	.5877	2.9441	1	.0862	.0730	2.7411
YFAM	-.0002	.0003	.2629	1	.6082	.0000	.9998
YSPM	.0009	.0008	1.1476	1	.2841	.0000	1.0009
Constant	4.3400	1.4234	9.2963	1	.0023		

	Chi-square	Significance
-2 log likelihood	148.412	0.8030
Goodness of Fit	171.446	0.3293

Total number of cases = 216
Number of case included in the analysis = 173
Percent correctly classified for overall sample = 80.92 %

6.3.1.2 By gender

The variable **SEX** is observed to be a very significant variable. Therefore separate logistic regressions are estimated for each gender. The following results are obtained. The results of the regressions show that for the male students, **STREAM** is significant at the 0.05 level while **FEDU** and **YFAM** are significant at the 0.10 level. All have the expected signs (Table 6.5). For the female students, **FEDU**, **GRADE** and **YFAM** are significant at the 0.05 level. All have the expected signs except for **YFAM** (Table 6.6).

Table 6.5 : Explaining the Decision to Continue (among Male students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
FEDU	-.5008	.2589	3.7420	1	.0531	-.1177	.6060
MEDU	-.0448	.3871	.0134	1	.9079	.0000	.9562
SIB	-.2474	.1514	2.6680	1	.1024	-.0729	.7809
GRADE	-.0668	.2329	.0824	1	.7741	.0000	.9353
STREAM	1.7159	.6589	6.7822	1	.0092	.1951	5.5615
YFAM	.0005	.0003	2.8160	1	.0933	.0806	1.0005
YSPM	9.05E-05	.0009	.0102	1	.9194	.0000	1.0001
Constant	2.5150	1.5695	2.5678	1	.1091		

	Chi-Square	Significance
-2 log likelihood	100.738	0.1858
Goodness of Fit	88.233	0.5030

Total number of cases = 153
Number of case included in the analysis = 97
Percent correctly classified for overall sample = 72.16 %

Table 6.6 : Explaining the Decision to Continue (among Female Students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
FEDU	-.9575	.3616	7.0138	1	.0081	-.1863	.3838
MEDU	.4759	.3709	1.6463	1	.1995	.0000	1.6095
SIB	-.1252	.1208	1.0741	1	.3000	.0000	.8823
GRADE	-.5569	.2406	5.3560	1	.0207	-.1524	.5730
STREAM	.5700	.7057	.6523	1	.4193	.0000	1.7683
YFAM	-.0006	.0003	4.0500	1	.0442	-.1191	.9994
YSPM	.0011	.0011	.9425	1	.3316	.0000	1.0011
Constant	4.9322	1.4674	11.2976	1	.0008		

	Chi-Square	Significance
-2 log likelihood	123.017	0.9844
Goodness of Fit	154.707	0.5814

Total number of cases = 252
Number of case included in the analysis = 167
Percent correctly classified for overall sample = 83.83 %

6.3.1.3 By ethnic groups

Taking estimates by ethnic groups gave the following results. Among the Malay students, **SEX** and **GRADE** are significant variables at the 0.05 level and **SIB** is significant at the 0.10 level. All have the expected signs (Table 6.7). Among the Chinese students, only **FEDU** is significant at the 0.05 level with the *a priori* sign (Table 6.8). Among the Indian students, none of the variables is significant. Among these insignificant variables, only **SEX**, **FEDU**, **STREAM** and **YFAM** have the *a priori* signs. The rest have opposite signs (Table 6.9).

Table 6.7: Explaining the Decision to Continue (among Malay Students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	-1.2993	.6424	4.0903	1	.0431	-.1421	.2727
FEDU	-.4801	.3294	2.1244	1	.1450	-.0347	.6187
MEDU	.3427	.3872	.7833	1	.3761	.0000	1.4087
SIB	-.2594	.1334	3.7792	1	.0519	-.1311	.7715
GRADE	-.7219	.3187	5.1314	1	.0235	-.1739	.4858
STREAM	.6547	.8415	.6053	1	.4366	.0000	1.9245
YFAM	-7.8E-05	.0004	.0468	1	.8287	.0000	.9999
YSPM	.0003	.0014	.0412	1	.8391	.0000	1.0003
Constant	5.2273	1.8284	8.1733	1	.0043		

	Chi-Square	Significance
-2 log likelihood	83.962	0.8600
Goodness of Fit	108.952	0.2321

Total number of cases = 196
Number of case included in the analysis = 108
Percent correctly classified for overall sample = 85.19 %

Table 6.8 : Explaining the Decision to Continue (among the Chinese Students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	-.5864	.5169	1.2874	1	.2565	.0000	.5563
FEDU	-1.0060	.3573	7.9285	1	.0049	-.2076	.3657
MEDU	.0513	.4300	.0142	1	.9051	.0000	1.0526
SIB	-.0792	.1708	.2149	1	.6429	.0000	.9239
GRADE	-.3516	.2300	2.3374	1	.1263	-.0495	.7036
STREAM	.7943	.6503	1.4920	1	.2219	.0000	2.2130
YFAM	.0002	.0002	.9666	1	.3255	.0000	1.0002
YSPM	-.0003	.0009	.1382	1	.7101	.0000	.9997
Constant	5.4548	2.0006	7.4340	1	.0064		

	Chi-Square	Significance
-2 log likelihood	112.509	0.2453
Goodness of Fit	105.113	0.4236

Total number of cases = 150
Number of case included in the analysis = 112
Percent correctly classified for overall sample = 74.11 %

Table 6.9 : Explaining the Decision to Continue (among the Indian Students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	-10.3174	8.8288	1.3656	1	.2426	.0000	.0000
FEDU	-1.7946	2.2660	.6272	1	.4284	.0000	.1662
MEDU	2.9734	2.6045	1.3033	1	.2536	.0000	19.5584
SIB	-.6958	.9905	.4935	1	.4824	.0000	.4987
GRADE	2.9234	3.2565	.8059	1	.3693	.0000	18.6042
STREAM	17.0550	78.9491	.0467	1	.8290	.0000	25521884
YFAM	.0006	.0016	.1400	1	.7082	.0000	1.0006
YSPM	.0109	.0132	.6831	1	.4085	.0000	1.0110
Constant	-9.2446	8.3468	1.2267	1	.2681		

	Chi-Square	Significance
-2 log likelihood	10.835	1.0000
Goodness of Fit	9.335	1.0000

Total number of cases = 60
Number of case included in the analysis = 44
Percent correctly classified for overall sample = 93.18 %

6.4 The Logistic Regressions Analysis (II) : Determinants of the Decision to Choose the Science over the Arts Fields.

The relationship between the variable **SAT** and the independent variables are summarized in the equation below.

$$SAT = a_0 - a_1 SEX - a_2 FEDU - a_3 MEDU - a_4 SIB - a_5 GRADE + a_6 YFAM - a_7 YSPM$$

where a_0 to a_8 are constants.

6.4.1 The Results of the Logistic Regressions.

6.4.1.1 The Overall Sample

The -2 Log likelihood value for the logistic regression has a chi-square value of 254.297 with a significance of 0.2513 and a Goodness of Fit value of 247.547 with a significance of 0.3552. The observed significance level indicates that this model does not differ significantly from the 'perfect model'. Overall, 77.82 percent of the sample were correctly classified (Table 6.10).

The regressions results show that **SEX**, **FEDU**, **GRADE**, and **YSPM** are significant at the 0.05 level of significance. Only **FEDU** and **GRADE** have the expected signs while **SEX** and **YFAM** are found to be of opposite signs (Table 6.10).

Table 6.10 : Explaining the Choice of Science and Technical or Arts Field.

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	.7357	.3340	4.8504	1	.0276	.1011	2.0869
FEDU	-.4444	.1795	6.1307	1	.0133	-.1217	.6412
MEDU	.1586	.2150	.5442	1	.4607	.0000	1.1719
SIB	.0245	.0846	.0841	1	.7719	.0000	1.0248
GRADE	-.3702	.1514	5.9776	1	.0145	-.1194	.6906
YFAM	-.0002	.0002	1.2319	1	.2670	.0000	.9998
YSPM	.0012	.0005	5.8577	1	.0155	.1176	1.0012
Constant	-.4559	.8433	.2923	1	.5888		

	Chi-Square	Significance
-2 log likelihood	254.297	0.2513
Goodness of Fit	247.547	0.3552

Total number of cases = 406
Number of case included in the analysis = 158
Percent correctly classified for overall sample = 77.82 %

Taking separate logistic regressions for urban and rural students gave the following results. For urban students, only **FEDU** is significant at the 0.05 level of significance with the expected sign. (Table 6.11). In the regression of the rural students, **GRADE** and **YSPM** are significant at the 0.10 level of significance. **GRADE** has the expected sign whereas **YSPM** has unexpected sign (Table 6.12).

Table 6.11 : Explaining the Choice of Science and Technical or Arts Fields (among Urban Students).

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	.5023	.5937	.7158	1	.3975	.0000	1.6525
FEDU	-.6740	.2916	5.3440	1	.0208	-.1812	.5097
MEDU	.2555	.3562	.5144	1	.4732	.0000	1.2911
SIB	-.0257	.2044	.0158	1	.8999	.0000	.9746
GRADE	-.3097	.2419	1.6398	1	.2004	.0000	.7336
YFAM	-.0001	.0003	.2897	1	.5904	.0000	.9999
YSPM	.0013	.0010	1.6959	1	.1928	.0000	1.0013
Constant	.2357	1.4510	.0264	1	.8710		

	Chi-Square	Significance
-2 log likelihood	91.354	0.0443
Goodness of Fit	77.096	0.2622

Total number of cases = 190
Number of case included in the analysis = 112
Percent correctly classified for overall sample = 69.23 %

Table 6.12: Explaining the Choice of Science and Technical or Arts Fields (among rural students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	.5714	.4640	1.5161	1	.2182	.0000	1.7707
FEDU	-.3133	.2386	1.7246	1	.1891	.0000	.7310
MEDU	.0199	.2823	.0050	1	.9438	.0000	1.0201
SIB	.0932	.1022	.8316	1	.3618	.0000	1.0977
GRADE	-.3455	.2049	2.8434	1	.0917	-.0704	.7079
YFAM	-.0004	.0003	1.3035	1	.2536	.0000	.9996
YSPM	.0011	.0006	3.5341	1	.0601	.0950	1.0011
Constant	-.7197	1.1485	.3927	1	.5309		

	Chi-Square	Significance
-2 log likelihood	158.105	0.5718
Goodness of Fit	168.104	0.3550

Total number of cases = 216
Number of case included in the analysis = 46
Percent correctly classified for overall sample = 81.18 %

6.4.1.2 By gender

The results of the regressions show that for the male students, **YSPM** is significant at the 0.05 level while **FEDU** and **GRADE** are significant at the 0.10 level. All have the expected signs except for **YSPM** (Table 6.13). For the female students, **GRADE** is significant at the 0.10 level with the *a priori* sign (Table 6.14).

Table 6.13 : Explaining the Choice of science and Technical or Arts Fields (among Male Students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
FEDU	-.5019	.2704	3.4467	1	.0634	-.1143	.6054
MEDU	-.0394	.3580	.0121	1	.9123	.0000	.9613
SIB	-.0841	.1581	.2828	1	.5949	.0000	.9194
GRADE	-.3922	.2346	2.7959	1	.0945	-.0848	.6755
YFAM	-.0003	.0004	.8570	1	.3546	.0000	.9997
YSPM	.0026	.0009	7.6230	1	.0058	.2253	1.0026
Constant	.7059	1.4686	.2311	1	.6307		

	Chi-Square	Significance
-2 log likelihood	92.209	0.1655
Goodness of Fit	92.032	0.1687

Total number of cases = 153
Number of case included in the analysis = 87
Percent correctly classified for overall sample = 75.86 %

Table 6.14 : Explaining the Choice oif Science and Technical or Arts Fields (among the Female Students)

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
FEDU	-.3827	.2599	2.1684	1	.1409	-.0321	.6820
MEDU	.1931	.2901	.4431	1	.5056	.0000	1.2130
SIB	.0797	.1017	.6141	1	.4332	.0000	1.0829
GRADE	-.3638	.2202	2.7290	1	.0985	-.0668	.6951
YFAM	-.0004	.0003	1.3738	1	.2412	.0000	.9996
YSPM	.0003	.0007	.1659	1	.6838	.0000	1.0003
Constant	-.3424	1.1574	.0875	1	.7674		

	Chi-Square	Significance
-2 log likelihood	155.144	0.4590
Goodness of Fit	156.642	0.4256

Total number of cases = 252
Number of case included in the analysis = 161
Percent correctly classified for overall sample = 79.50 %

6.4.1.3 By ethnic groups

Taking estimates by ethnic groups (Table 6.15), gave the following results. Among the Malay students, only **YSPM** is significant at the 0.10 level with the unexpected sign. Among the Chinese students, **FEDU** and **GRADE** are significant at the 0.05 level with the *a priori* sign. Among the Indian students, only **SEX** variable is significant but it does not have the expected negative sign.

Table 6.15 : Explaining the Choice of Science and Technical or Arts Fields Among the Ethnic Groups.

I) Malays

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	.0243	.6517	.0014	1	.9702	.0000	1.0246
FEDU	.1212	.3040	.1590	1	.6901	.0000	1.1288
MEDU	-.2257	.3436	.4314	1	.5113	.0000	.7980
SIB	.0982	.1191	.6804	1	.4094	.0000	1.1032
GRADE	-.4379	.2994	2.1393	1	.1436	-.0359	.6454
YFAM	-.0005	.0005	1.2505	1	.2635	.0000	.9995
YSPM	.0021	.0012	3.3974	1	.0653	.1136	1.0022
Constant	-1.2597	1.4710	.7334	1	.3918		

	Chi-Square	Significance
-2 log likelihood	98.503	0.4667
Goodness of Fit	101.000	0.39760

Total number of cases = 196
Number of case included in the analysis = 106
Percent correctly classified for overall sample = 81.13 %

II) Chinese

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	.8732	.5625	2.4101	1	.1206	.0597	2.3946
FEDU	-.8869	.3107	8.1463	1	.0043	-.2310	.4119
MEDU	.5278	.4319	1.4934	1	.2217	.0000	1.6951
SIB	.0435	.1938	.0505	1	.8222	.0000	1.0445
GRADE	-.4887	.2460	3.9472	1	.0470	-.1300	.6134
YFAM	-.0002	.0003	.2304	1	.6312	.0000	.9998
YSPM	.0009	.0008	1.3129	1	.2519	.0000	1.0009
Constant	-.2129	1.7412	.0150	1	.9027		

	Chi-Square	Significance
-2 log likelihood	94.226	0.4450
Goodness of Fit	93.837	0.4562

Total number of cases = 150
Number of case included in the analysis = 101
Percent correctly classified for overall sample = 79.21%

Table 6.15: Continued

III) Indians

Variable	B	S.E.	Wald	df	Sig	R	Exp(B)
SEX	1.6839	.8834	3.6336	1	.0566	.1762	5.3864
FEDU	-1.0127	.7001	2.0927	1	.1480	-.0420	.3632
MEDU	.5279	.7241	.5315	1	.4660	.0000	1.6954
SIB	.0991	.2987	.1100	1	.7401	.0000	1.1042
GRADE	-.0761	.3544	.0461	1	.8301	.0000	.9268
YFAM	-.0002	.0006	.0840	1	.7719	.0000	.9998
YSPM	-.0016	.0016	.9514	1	.3294	.0000	.9984
Constant	.8086	2.5581	.0999	1	.7519		

	Chi-Square	Significance
-2 log likelihood	41.597	0.1449
Goodness of Fit	41.291	0.1524

Total number of cases = 60
Number of case included in the analysis = 41
Percent correctly classified for overall sample = 75.61 %

6.5 Discussion of the Significant Variables.

6.5.1 SEX

SEX is found to be significant in determining the decision to continue schooling. The analysis indicates that being male decreases the propensity to continue studies, *ceteris paribus*, by the odds of 0.255. It means that more girls in the 90s are orientated towards achieving a higher level of education than before. It could also mean that boys are less enthusiastic about further education than before. Taking

estimates by location, **SEX** is not significant among the urban students but is significant among the students from the rural schools. Among the rural students, being males decreases the propensity to continue, *ceteris paribus,* by the odds of 0.199. Among the ethnic groups, **SEX** is significant only among the Malays; being males decreases the propensity by the odds of 0.273. It seems that more rural and Malay girls are orientated towards achieving higher levels of education. In analyzing the students' choice of science or arts fields, **SEX** is found to be positive and significant. Being males increase the propensity to chose the science and technical field by the odds of 2.087. Boys are more inclined towards the science and technical fields than girls. This lends supports to the findings from our sample crosstabulations. However, **SEX** is only significant among the Indian students, being Indian and male increases the propensity to chose the science and technical field by the odds of 5.386.

6.5.2 FEDU

FEDU is significant and is negatively correlated to the decision to continue as hypothesized. Father's educational level seems to influence the decision to continue. A unit decrease in **FEDU** will increase the propensity to continue by the odds of 0.545.

It means that the higher the level of father's education, the higher the probability that the student will continue further education. The significance of this variable can be seen in urban students, the odds being 0.482; in rural students, the odds being 0.524; among male students, the odds being 0.606; among female students, the odds being 0.384; among the Chinese, the odds being 0.366. It should be noted here that father's education does not seem to influence the decisions of the Malay and Indian boys. In analyzing the choice between science and the arts fields, father's education is significant. The higher the father's education increases the propensity to choose the science and technical field by the odds of 0.641. Father's education is also significant among urban, male and Chinese students. Being in urban schools increases by the odds of 0.51; being male increases by the odds of 0.605 and being Chinese increases by the odds of 0.412.

6.5.3 SIB

A unit increase in the number of children in the family will decrease the propensity to continue by the odds of 0.849. The analysis seems to point to the fact that having a bigger family works against continuing one's education. This variable is significant among Malay students. A unit increase decreases the propensity

to continue by the odds of 0.772. Probably a large family serves as a depressant towards further education among the Malays. Family size is not a significant factor in the choice of Science or Arts fields.

6.5.4 GRADE

School grades (in this case the upper-secondary examination results) do exert a sizeable influence on the decision to continue. The results indicate that a unit decrease in school grades will increase the propensity to continue by the odds of 0.748. This means better grades propel the students to demand for higher education. If one has good grades, why waste it by not furthering to higher education? This variable is significant in the case of rural students, the odds being 0.694; in female students, the odds being 0.573 and among the Malay students, the odds being 0.489. In analyzing the choice between the Science and Arts field, school grades is significant. A unit decrease in grades will increase the propensity to choose the science and technical field by the odds of 0.691. This variable is significant among rural students (the odds being 0.708), both male and female students (the odds being 0.676 and 0.695), and among the Chinese students (the odds being 0.613). School grades seem to determine the choice of the science field for rural students, for both boys and

girls, and Chinese students. It is interesting to note that school grades does not seem to determine the choice of science field for Malay and Indian students. Having good grades in this case does not mean the Malay or Indian students will automatically select the science and technical field.

6.5.5 STREAM

Being in the science stream increases the propensity to continue education by the odds of 2.88. This suggests that science students are confident that they are able to continue education. **STREAM** is significant among both urban and rural students, and among the male students. The propensity to continue for the urban students is increase by the odds of 4.573, for rural students by the odds of 2.741 and among the male students by the odds of 5.562.

6.5.6 Other variables

The variable for family income, **YFAM**, is positively significant among the male students. The propensity to continue increase by the odds of 1.00 for a unit increase in **YFAM**. However, it is negatively significant among the female students. A one unit

increase in family income decreases the likelihood of continue by the odds of 1.00. Most likely because of sex-role stereotyping, being males, the decision and choice of education will depend on family income. If they had the means, families would provide greater support their male children in the pursuit of higher education. By taking estimates in the choice of science and technical or arts field, family income is not a significant variable. It means the family income is not a determining factor in the choice of educational fields.

YSPM (perceived earnings should one work after the SPM) is significant in the choice of educational fields. The sign however is positive (as opposed to the hypothesized relationship used in the decision to continue education in which **YSPM** is not significant). A unit increase in expected earnings will increase the likelihood of the choice of science and technical field by the odds of 1.011. In most likelihood, students who perceived higher earnings whether they continue education or not, would chose the science field. Their perception of higher earnings is thus related to the affinity towards the science field. This variable is significant among the rural students,

the male students and among the Malays. A unit increase in earnings expectation increases the desire to choose the science and technical field by the odds of 1.000 (for all).

6.5 Summary of findings.

This chapter deals with the determinants of educational decision and choice. Regression of the overall sample indicates that the mother's education does not seem to be an influence in students' decision to continue education. Students' educational decisions or choices are not significantly affected by mothers' education and occupation. Family income in general, does not seem to be an influence in the decision to continue. The reason could be because as long as students can obtained good grades, the parents will support them in furthering their education irrespective of family income. Perceived earnings are not a factor of importance in the decision to continue education in general. Probably at this age, the students are unable to predict their salary should they start working after form five, or even after further education. Being male, father's education, being in the science stream, family size and school grades are factors of influence in students' educational decisions at this level (form four).

Among the urban students, father's education and being in the science stream influence students' decisions, as compared to rural students whereby being male, and school grades besides father's education and being in the science stream do exert an influence on the students' decisions. Taking the analysis by gender, among the boys, father's education, being in the science stream and family income (positive) play a role in their decision. Among the girls, father's education, school grades and family income (negative) exert an influence. Taking the analysis by ethnic groups, being male, family size and school grades seem to influence the Malay students' decisions whereas among the Chinese students, only father's education seem important as an influencing factor in their decisions. There were no significant factors of influence among the Indian students in educational decisions.

In analyzing educational choices in terms of the science and technical or arts fields among the students, it was found that mother's education or occupation, family size and family income do not seem to be an influence. Among the urban students, only father's educational level is an influence in the choice of the science field. Among the rural students, school grades and perceived earnings after SPM are significant

variables in the educational choice. Male students' educational choice tend to be influenced by father's educational level, school grades and perceived earnings after SPM. The female students however are only influenced by school grades in their choice of Science and technical field. Analysing by ethnic groups, it was found that the choice of the Malay students are influenced by perceived earnings after SPM, the Chinese students by father's education and school grades. Among the Indian students, being male greatly affects the choice of science and technical field.