

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

A fundamental assumption upon which human capital theory is based is the assumption of individual choice. In the case of educational investment, demand is determined on the basis of individual's educational decisions aimed at maximizing net present value of lifetime earnings.

The above assumption is not entirely accurate. In most developing countries, supply is controlled by the government. Demand is, therefore, constraint by supply of places which public authorities are able to make available. Public authorities do consider the demand side. However, even when demand exceeds supply, they are not able to satisfy it since their decisions might be affected by additional factors such as budget constraint, manpower needs and existing educational capacity.

Moreover, individual demand for education is not solely a function of future economic benefits. One reason is that future economic benefits are not easily estimated by students or their parents at the time they decide to continue or discontinue their studies. There are other additional factors such as school performance, socioeconomic status (SES) and psychological influences which are important determinants in the students' educational plans [See for instance, OECD (1979)].

In this report, 'individual demand' for education as a concept must not be confused with 'social demand'. 'Social demand' is used at the collective level where the decisions (choices or applications) of individuals are aggregated. 'Individual demand' refers more to the demand for education derived from the needs and aspirations of a person or groups of persons as contrasted with the 'manpower' needs of society. Therefore, the term 'individual demand' helps to focus attention on the factors affecting individual decisions and choices towards specific educational fields. In this report, a method of approach is outlined based on Marceau's classification (1979). This is used as a framework for the analysis of the principal factors affecting individual demand. The main factors discussed are grouped into four principal categories. Marceau

(1979) classifies the major factors into psychological or individual, social or familial, structural or institutional and economic or financial (Figure 2.1).

DETERMINANTS

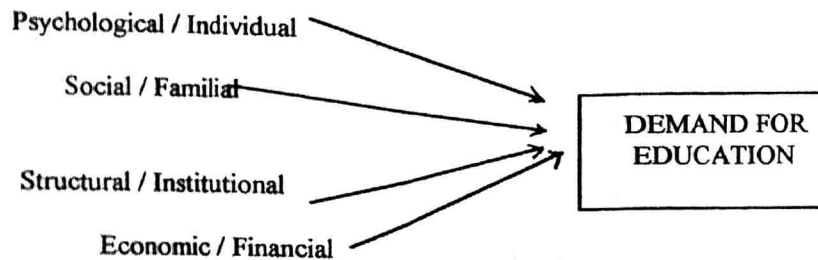


Figure 2.1 : Determinants of the Demand for Education
(In reality, all the factors **interact** but for the purpose of this analysis, the factors are divided into **the four categories**).

The first part of this chapter reviews literature from other countries, followed by some Malaysian studies. A comparison is made based on the research already carried out between the two. This will give us a picture of the principal factors involved and helps to give a clearer picture of the perspective of individual demand to be done in this research paper. Following which, a listing of principal hypothesis to be tested and the methodology to be used will be given.

2.2 Survey of International Literature

Individual demand for education, is the result of a long series of decisions by students at different points in the education system. Children have to make certain kinds of educational 'choices' even several years before reaching the end of compulsory education. The long process of decision-making is merely a series of compromises reached by a child, and his or her family. The finality of the decision made would have been subjected to a number of factors or influences.

Marceau (1979) specified that an individual, in making his or her decision, has to match together the requirements of the different choice alternatives. To do so, both in terms of technical qualifications and social role characteristics, he or she would, in some circumstances, move along paths preordained by institutional characteristics, and also according to the rewards he or she sees as accruing to specific choices. The rewards involved may refer both to the intrinsic intellectual, emotional and social satisfaction of the educational experience and to the income, prestige, security, working conditions, etc., current in the occupation. For some individuals, the

ranking of rewards may be based principally on interest and for others on aspiration, while yet others may mix the two.

An individual's decision to demand education may not be expressed in one but several applications. While students mostly only enroll in one, or at the most two, principal courses of study, they may apply to several and their actual enrolment, the supply side of the equation, may constitute for them a compromise at a low level of aspiration and contain considerable connotation of failure. Applications will, to some extent, vary with the individual's willingness to accept failure and reflect a compromise reached between high preference or high risk (i.e. low expectation of success) or safer but less attractive alternatives. Enrolments represent the results of the constraints exercised by supply of places as well as this compromise.

Finally, the decision to apply for a particular school or sector of education as well as its level, may represent for some people a decision based on attraction, for others on repulsion from other alternatives, and for others, a postponement of the real decision. Thus it is important to have some indications of whether the decision, for instance to leave school, is

based principally on an attraction to the world of work and its rewards, or on repulsion from aspects of school life which are found unacceptable. Moreover, even what looks like a final decision, such as a dropout, may still include some reference to the future. It may, for instance, be a "wait-and-see-I-can-always-go-back-later" decision should the institutional arrangements of the education system in a society allow it.

Individual demand, as it evolves through early secondary studies therefore, can result in applications to upper-secondary and subsequently to higher education. The major factors influencing individual demand may then be grouped into four categories for the purpose of analysis and to simplify discussion, although in reality, all the factors interact. They are psychological or individual, social or familial, structural or institutional and economic or financial.

Implicitly, when discussing these, answers can be formulated to questions concerning what affects demand for education, who is affected, why they are affected and by which means. In all of the factors, some elements tend to cause stability in individual demand of a specific type, and these are less open to policy

decisions, at least in the short run. Some elements cause change, or could be made to facilitate change, and these are more open to modifications.

2.2.1 Psychological or individual factors.

Psychological or individual factors includes the importance of occupational motivation which covers aspects of interests, aspirations, desired goals, plans, intents and choices; and sex and sex roles.

The dominance of occupational motivation was apparent in Marceau's (1979) report. A study was carried out on choices of fifth and sixth form students in UK (1975). The study revealed that 89 percent of the students wanted to obtain qualifications that were vocationally useful through their post-secondary education. The French report, quoting INOP²⁵ and INED²⁶ studies, showed that the reasons given for choices were predominantly vocational ones. In Sweden, there was a higher demand for entrance to fields of higher learning which have guaranteed professional outlets (for example medicine) or quasi-guaranteed ones (for example civil-engineering). Strong occupational possibilities was a

²⁵ Institut national d'opinion publique

²⁶ Institut national d'etudes demographiques

motive for their choices. In Germany, a study by means of descriptive statistics, based on about 4,000 students in 1973 to 1974, showed that the most frequent reply to the question of why they continue studies was the wish to enter a specific profession and to lay the foundation for their future career opportunities. Although the majority of students decide their course of action with professional motives uppermost in their minds, other elements of influence cannot be denied. Besides the above replies, other reasons cited were the development of one's own abilities, the intellectual challenge of the subject, or a desire to help people (Beckerhoff, 1979). In Greece, the wish to study was most frequently (29 percent) cited. The wish to improve social status ranked second (22 percent) followed by the wish to exercise a suitable profession (11.6 percent) and the wish to improve one's economic situation (7 percent). The report suggested that perhaps parents' wishes should be added as a motivation (Soumelis, 1979).

Individual
Aspirations
factors
✓

Gender appears as a major element in educational choice where sex-role stereotyping seems to be an important influence on the demand for education. In most of the countries covered in the General Report and Case Studies (OECD, 1979), girls are still under represented proportionately in higher education. In

Britain, although girls between 1965 and 1975 had a higher propensity to stay on at school after the minimum school-leaving age than did boys, they remained a smaller proportion than boys among students qualifying for university entrance. Sex differences in participation at different educational levels vary between more or less developed countries. In less developed countries females are under represented at all levels but increasingly so beyond compulsory schooling. In more developed countries the differences have narrowed in the secondary, higher or even in a few exceptional countries to graduate level. In general, males are the majority especially at higher institutions of learning. Take for instance Singapore, in 1965, less than 30 percent of all students in the universities were women. However, access to university education spread rapidly among women and today the proportion is over two-fifths. Women formed the majority of arts, science, law, accountancy, and dentistry students in the University of Singapore²⁷.

On the issue of selection of courses, boys tend to opt for professional courses which are socially and economically rewarding (as a priority). On the other hand, girls have a tendency to make educational

²⁷ Pang Eng Fong, "Public policy and the Demand for Higher Education" in *Education, Manpower and Development in Singapore*, Singapore Uni Press (1982).

satisfaction a priority (Marceau, 1979). Thus, girls seem to enroll mostly in health specialties, particularly in nursing and care options, education, home economics, languages and humanities in general. In Sweden, Harnqvist (1979), found that as the institutional arrangement and the minimum requirements of certain higher schools interacted with educational choices, girls became confirmed as linguists rather than mathematicians. This reinforced the image of the 'right' choice for girls and increased the likelihood of that choice being made at the next generation. Support for this finding comes from a case study in France which even suggested a sexual 'dimorphism', with girls taking options which have stronger 'general culture' components, and boys looking more towards a economical profession (Cibois, 1979). In other words, sex-role stereotyping determines the range of possibilities seen as reasonable by boys and girls.

Psacharopoulous and Soumelis (1979) analyzed 7,425 secondary school students in Greece regarding their demand for education. A set of family, personal, geographical and school characteristics are related by means of multivariate analysis to the student's decision to continue or not to continue his studies at a particular institution of higher learning. Here, gender was found to be a sizeable and statistically

significant variable in determining the demand for further education. For instance, being male (*ceteris paribus*) increased the propensity to continue to tertiary education by 11.8 percentage points and decreased the probability of someone self-selecting not to continue by 7.1 percentage points. On the contrary, Psacharopoulos' (1982) study of 3,300 students in Portugal in their final year of lower secondary education regarding their plans for further studies showed that the gender variable was not statistically significant and thus sex-role stereotyping does not have a significant influence in the transition from lower- to upper-secondary education in Portugal. The explanation to this was that at this age, sex-role stereotyping is not important.

2.2.2 Social or familial factors.

Studies on the influences which affect students' choices at crucial points within the process of education has emphasized the central role of the social origins and socioeconomic status (SES) of the family background of the individual. More often than not, it is measured by the profession of the father or both parents.

From the OECD studies (1979), there is evidence of a positive relationship between SES and educational choices. (Families high on the social scale provide a privileged environment for their children which is reflected in performance at school, attitudes to school and educational choices.) The fact remains that educational options of high future rewards is usually taken by students from high SES. Gordon and Williams (1979) found out that the upper-middle class students were twice as likely as lower manual working class students in the same ability groups, to stay on at school after compulsory education. In France, after the end of compulsory education, approximately 30 per cent of students each year leave school to go to work. The social origins of these students are low on the social scale (Cibois , 1979).

Staying on in post-compulsory education in Britain has been found to be closely related to the parents' own school-leaving age. Studies have shown the high correlation between the students' and parents' age of leaving school. Students from the higher social class groups are more likely than those from the lower social class to have parents who are in favour of their staying on in post-compulsory education after the age of sixteen (Gordon and Williams, 1979).

There were other findings. Family size seems to have a negative influence on educational aspirations (Rehberg and Westby, 1967). Krauss (1964) studied college aspirations among working class high school students and found that educational aspirations were higher in students with mothers who had a non-manual job and a higher education than the father.

2.2.3 Structural or institutional factors.

Educational programmes after the compulsory level have some form of minimum requirements for entry. More often these are expressed in terms of earlier educational attainment and are restricted by the number of places available.

Thus, the demand for education seems to be strongly related to academic achievement. School marks obtained in a subject or group of subjects could influence students' choices. Early decisions about options, as indicated in the Swedish Report by Harnqvist (1979), were based on marks. Students tend to make choices or decisions either in terms of going towards the subjects where they had the best marks or going away from

those they had the worst. For example, in Sweden students making a choice for the Sciences or Technical studies had high marks in Mathematics and Science subjects and low marks in language (Harnqvist, 1978). Thus, the status accorded to different subjects may be an added important factor of influence in students' choices. The French Report²⁸ shows that the reason given for choices made were predominantly vocational ones which were strongly influenced by the success in Mathematics. *min require*

(In Greece, around 90 percent or more of secondary school-leavers intended to attempt to enter higher education if only their school marks permitted it (Soumelis, 1979).) Therefore, in the process of self-selection in comprehensive, elective systems, educational achievement seems to be rather important. Therefore it is interesting to note that the study by Psacharopoulos and Soumelis (1979) in Greece indicated the dominance of school grades as a key variable affecting students' plans for further studies. The maximum likelihood estimates of 'yes-no' in students' decisions showed that every extra grade in secondary school increased the propensity to continue studies by 5.6 percentage points, and the propensity to continue to a university by 10.8 percentage points. By contrast, it decreased the probability of someone opting not to continue by 2.8 percentage points.

²⁸ INOP, INED Report (1979)

The study by Psacharopoulos (1981) in Portugal also indicated that secondary school grades exert a sizeable influence on the propensity to continue further education. A below average performer has a chance of 74.0 percent to continue and an above average student has a 92.0 percent chance. This reinforced the result of the sizeable effect of school grades on self-selection done in the earlier study by Psacharopoulos and Soumelis (1979).

2.2.4 Economic or financial factors.

Financial factors which are often linked to students' financial standing are related to family income and anticipation of financial rewards after schooling. Students anticipate financial rewards from staying on at school. Consequently, their demand for education after compulsory schooling is influenced by this anticipation. However considerations of cost such as the extra cost of continuing studies as compared with starting work will push a student to the labour market earlier. The OECD (1990) studies suggested that it was much more expensive for low- and medium-income parents to keep their child in upper-secondary education than for the high-income parents.

Gordon and Williams (1979) examined the hypothesis that pupils who expected a large salary differential in favour of jobs for which high qualifications are needed are more likely to continue their full-time studies in post-compulsory secondary or higher education. On the other hand, pupils who see no monetary advantage in this way will most likely go into early employment. The analysis, based on national stratified random samples of two cohorts (fifth and sixth formers), indicated a positive relationship between expected earnings differentials and further education. However, it was not a conclusive finding as quite a high proportion (59.0 per cent) of fifth formers of both sexes who indicated a desire to continue full-time education did perceive low or medium earnings differentials. On the other hand, 28.0 per cent of the intended school leavers of both sexes perceived high salary differentials and 62.4 per cent perceived medium salary differentials. There are several explanations for the above. Firstly, there is the relative inability of students and parents to calculate ex-ante rates of return for various alternative educational strategies. Probably, the most important information students or parents may make use of is salary differentials during the first five years of work and, perhaps, the starting salary differentials. Secondly, grants and loans are available to many students

in universities in Britain. These aids replace a large proportion of private earnings foregone and thus encourage students to continue their education.

Kodde's study (1988) analyzed the demand for education in the framework of employment prospects that depend on the amount of education. The basis for this study was because unemployment considerations were especially important for European countries in the 1980s. He used comparative statistics to derive the theoretical properties of the model. By fitting a binomial logit model to a sample of educational choices of 1,085 Dutch high school graduates, he found substantial empirical support for the theory. The study revealed that high employment by itself does not drive youth towards additional education, but youths strive for more education to improve their employment prospects.

Willis and Rosen (1979) derived a structural model of the demand for college attendance from the theory of comparative advantage and statistical models of self-selections; that is, a model of the demand for college education derived from its effect on expected lifetime earnings compared with its cost. Attention was focused on specifying the role of earnings in the derived demand for schooling. The model was

estimated on a sample of 3,611 respondents to the NBER-Thorndike-Hayen survey of 1968-71. The structural probit model taken gave the following conclusions. First, expected lifetime earnings influence the decision to attend college. Secondly, those who attended college earned less than similar people who did not attend.

Fields' (1974) study examined the importance of three factors: the individual's expectations of the future financial benefits he will receive less the pecuniary costs of education, the non-pecuniary (or psychic) benefits of being an educated person in relation to non-pecuniary costs and the ability of the individual (or his family) to incur the direct costs today in order to receive future benefits. The analysis suggested three possible explanations for the high demand for education despite open unemployment and employment at a lower skilled level for a large number of educated persons. Firstly, the demand for education may be relatively inelastic with respect to private returns. This may be attributed to the fact that the demand for education is primarily for the consumption of non-pecuniary benefits rather than for the financial returns which are measured by present values. Secondly, it may be because the present value is already so large that education is a sound financial investment and almost

everyone wants it. Thirdly, the present value of investing in education may be relatively inelastic with respect to the supply of educated workers.

2.3 Review of Malaysian Literature.

A number of studies on educational investment have been made based on Malaysia. The following is a discussion of these studies based on Marceau's clasification.

2.3.1 Psychological or individual factors

Wang B.C. (1980) examined sex and ethnic differences in educational investment in Malaysia by using a stratified sample of form five students. These students were from government schools in the state of Penang and Province Wellesley in 1972. She made a hypothesis that as long as members of sex and ethnic groups are influenced by perceived returns to further education, those groups perceiving greater benefits from further education will have greater tendencies to continue schooling than those perceiving lower benefits. (Benefits here refer to marginal rates of return). She examined ethnic differences among males separately from

females, because she rationalized that the motivational bases of educational behaviour for the two sexes are likely to be different. Sex differences in educational decision making is examined, to probe the role of external reward structures versus internalized cultural norms. If women with the same educational qualifications as men expect lower earnings than men, the position of women relative to men is comparable to that of non-Malays relative to the Malays. Thus Wang (1980) made sex and ethnic comparisons with respect to:

- a) Non-Malay - Malay differences among males in perceived benefits of and propensities to further education,
- b) the same, for females,
- c) male-female differences among the Malays,
- d) the same, among the non-Malays.

The ethnic and sex differences in expected benefits of a form six education which influence the desire to further education is shown in table 2.1 below. In each ethnic group girls expected lower salaries than boys do although they do not differ significantly in their perceptions concerning the difficulty in finding a job after form six. Chinese girls are less optimistic regarding university entrance than their male counterparts. Thus it may be concluded that boys in each

group are more likely than girls to pursue education beyond high school because they expect greater rewards from further education. Malay girls are also affected by sex differences in expectation of university education. The reason for this is that both Malay and Chinese girls are constrained by social norms regarding female roles.

There are marked differences between Malays and non-Malays of each sex in expected salaries after form six. Malays are more optimistic than non-Malays in perceived ease with which form six graduates can get jobs. This is not surprising in the light of government efforts to increase Malay participation in the private sector. Malays are also more optimistic than non-Malays regarding university admission after form six. The final conclusion to Wang's study is clear that the likelihood for Malays than non-Malays to pursue further education beyond form 5 is the greater perceived benefits that a form six education will bring. In addition, women are discouraged from attainment of higher education due to actual discrimination and socialization which lower the earnings women expect from educational investment.

Table 2.1 : Ethnic and Sex Differences in Expected Benefits of Form Six

TABLE 6							
ETHNIC AND SEX DIFFERENCES IN EXPECTED BENEFITS OF FORM 6							
	Male Students			Female Students			Difference-of-Means Test P*
	M	SD	N	M	SD	N	
Perceived Starting Salary of a Sixth-Form Graduate (\$)							
Malays	362	127	287	339	112	203	<.05
Chinese	270	110	439	252	95	450	<.01
Difference-of-means test P*		<.001			<.001		
Perceived Number of Months to Find a Job after Form 6							
Malays	6.9	6.2	305	7.8	7.8	207	>.10
Chinese	9.8	9.2	441	9.7	7.3	441	>.10
Difference-of-means test P*		<.001			<.01		
Expectation of University Admission†							
Malays	1.98	.47	304	1.95	.58	211	>.10
Chinese	2.20	.64	444	2.42	.63	446	<.001
Difference-of-means test P*		<.001			<.001		

* Two-tailed significance level.

† Respondents chose one of the following four responses to the question, "If you go to form 6 next year, do you think you will get accepted into a university 2 years later if you apply?": 1 = definitely yes, 2 = probably yes, 3 = probably no, and 4 = definitely no.

S152

June 1980

Source : Comparative Education Review, June 1980, pp. S152, Table 6.

However this situation is slowly changing. In the nineties women benefited from equal access to educational opportunities. Enrolment of female students in the Universities have increased from 29.1 percent in 1970 to 44.3 percent in 1990. Enrolment of female students in secondary education has increased from 40.6 percent in 1970 to 50.5 percent in 1990. Although there was an apparent preference of female students for non-technical and non-vocational disciplines, over the 1970-1990 period, female enrolment in the technical stream increased significantly from 4.3 percent to 35.9 percent. Women still formed the majority in the Teacher Training Institutions, at 56.1 percent in 1990²⁹.

Wang also examined whether the decision to continue schooling is influenced by the perceived probability that one will pass the certifying examination at the end of two years of form six. Table 2.2 shows the correlation between ability and the desire to continue into form six. Among the Chinese students, ability has a strong and significant effect on the desire for further schooling whereas the effect is moderate or statistically insignificant among the Malays. Table 2.3 also shows that

Min
requires /
Ability

²⁹ Malaysia, Sixth Malaysia Plan (1991-1995), pp421, table 16.5.

while holding constant the expectation of qualifying for university admission after form six, ability has a direct effect on the desire to continue in all ethnic or sex groups. The effect is more pronounced among Chinese. However, close to 100 percent Malay students expect to qualify reflecting the optimism resulting from favourable admission quotas for Malays. Table 2.3 shows the effect of expectation of university admission on the tendency to invest in form six. This effect is significant and positive among the Chinese, but observable only among the low-ability Malay students. This result reinforced the above explanation.

2.3.2 Social or familial factors

Chew S.B. et al. (1990) attempted to monitor the movement of students through the education system into employment. The first part of the study examined the determinants of higher education. The analysis was done by means of descriptive statistics and measures of association. Two cohorts (3,283 sixth form students and 7,944 fifth form students, covering four

Table 2.2 : Effect of Ability on Strength of Desire to Continue into Form Six.

SEX AND ETHNIC DIFFERENCES IN MALAYSIA

TABLE 3
EFFECT OF ABILITY ON STRENGTH OF DESIRE TO CONTINUE INTO FORM 6* (r_c)

Monthly Family Income (\$)	Malays		Chinese	
	Males	Females	Males	Females
Income Held Constant				
< 100	.19** (80)	-.06 (58)	-.06 (24)	-.10 (31)
100-199	.15** (83)	.21** (48)	.18** (19)	.28*** (99)
200-299	-.07 (59)	.29** (26)	.20*** (40)	.21** (76)
300-399	.18 (25)	.25* (24)	.20*** (89)	.12 (63)
400-499	.01 (32)	.05 (28)	.10 (32)	.42*** (51)
500-599			.41** (22)	.42*** (35)
600-799			.63*** (24)	.55*** (36)
800-1,199			.53*** (26)	.24* (28)
1,200 +	.32 (6)	.11 (32)	.33** (32)	.07 (32)
Expectation of Qualifying for University ^b Held Constant				
Expect to qualify	.10** (268)	.12** (186)	.28*** (314)	.29*** (249)
Do not expect to qualify	.39** (21)	.02 (20)	.16** (109)	.21*** (182)

NOTE. —N's in parentheses.
 * See asterisked note to table 1.
^b Response to the question, "If you go to form 6 next year, do you think you will get accepted into a university 2 years later if you apply?"
 * $P < .10$.
 ** $P < .05$.
 *** $P < .01$; no asterisk indicates lack of statistical significance at $P = .10$.

Source : Comparative Education Review, June 1980 , pp S149, Table 3 .

Table 2.3 Effect of Expectation of University Admission on Strength and Desire to Continue into Form Six, holding Ability Constant.

TABLE 4
EFFECT OF EXPECTATION OF UNIVERSITY ADMISSION ON STRENGTH OF DESIRE TO CONTINUE INTO FORM 6, HOLDING ABILITY CONSTANT (r_c)

Average LCE Grade	Malays		Chinese	
	Males	Females	Males	Females
2.49 or better	-.10 (29)	... ^a	.12 (72)	.20 (31)
2.50-3.49			.27** (59)	.30*** (55)
3.50-4.49			.40*** (74)	.11 (52)
4.50-5.49			.17** (82)	.27*** (76)
5.50-6.49	-.08 (69)	.41*** (48)	.28*** (84)	.35*** (87)
6.50-7.49	.19** (81)	.32*** (63)	.32*** (62)	.37*** (74)
7.50 or worse	.19 (28)	.26** (40)	.04 (19)	-.11 (65)

NOTE. —N's in parentheses; for further explanations, see all footnotes to table 2.
^a The r_c cannot be completed because all eight Malay girls with average LCE scores of 3.49 or better expected to qualify for university after 2 years of form 6; that is, there were no negative responses.

Source : Comparative Education Review, June 1980 , pp S149, Table 4.

states in Malaysia). The research attempted to analyze school factors, economic factors, personal characteristics, student's family background, geographic location and government policies on the decision to continue schooling and the choice of study. The analysis revealed that the majority of the fifth and sixth form students (93.9 % and 98.0 %) intended to pursue higher education after secondary schooling, and aimed to go to the university. Students from family of higher SES have a higher propensity to aspire for higher educational levels and tended to opt for university rather than college level education. Students of lower SES tended to select to enter employment due to financial constraint. It must be noted that since the students comprised of fifth and sixth formers, self-selection has already taken place.

Wang B.C. (1977) found that the lower SES groups are slower than the higher groups to change their educational preferences. The lower SES groups continue to aspire towards administrative rather than the technical and scientific occupations. It was found that the socioeconomic distribution of Malays was lower. Thus, it was expected that Malays were more disposed towards Humanities and Social Sciences than the Chinese. When social class was held constant, choice of study was

occupational opportunities as being severely restricted without high education.

Table 2.4
Educational aspirations of male secondary school students by ethnicity and social class in percentages

TABLE 4. EDUCATIONAL ASPIRATIONS OF MALE SECONDARY SCHOOL STUDENTS BY ETHNICITY AND SOCIAL CLASS IN PERCENTAGES*								
Educational Aspirations	Ethnicity and Social Class							
	Malay				Chinese			
	H	HM	LM	L	H	HM	LM	L
University	84	83	79	87	77	71	59	71
Teacher's College	1	1	1	2	5	5	8	9
Technical College	5	7	6	3	5	8	14	6
Agricultural College	5	3	6	5	2	4	5	6
Other Schools	1	1	1	0	2	2	1	2
None of the above	2	3	4	2	2	2	3	1
Don't know	3	3	5	2	6	7	12	5
Number of cases	563	180	392	759	1071	447	326	163

*This question was worded as follows: "If you have the chance to continue your education, up to what level do you hope to reach?" The students were provided with the seven choices listed above.

Source: Comparative Education Review, June 1973, pp. 225, Table 4.

The study found that in sharp contrast to the Chinese, relatively few Malay students in the survey, have fathers who have achieved high status occupations without a high level of educational attainment. Comparing the occupations and education of fathers by ethnicity of the students in the survey, it was found that there is a stronger relationship between level of education and occupational status of fathers for Malays ($\gamma = 0.61$) than for the Chinese ($\gamma = 0.28$)³⁰. It

³⁰ Goodman and Kruskal's gamma

was explained that this was probably due to the entrepreneurial activities of Chinese without high educational attainment. Moreover, Malay youths believed that education is an important factor in getting ahead in life.

2.3.3 Structural or institutional factors

Studies by Chew et al. (1990) revealed that government policies, career guidance and counseling in school seemed a significant influence on the students' aspirations for higher education. In terms of ethnicity, government policies increased *Bumiputra* enrolment in sixth form education. ✓

Wang B.C. (1977) examined the educational consequences of government efforts to restructure the ethnic stratification system in West Malaysia. The study specifically examined how government policies affect the educational aspirations and expectations of students. It also examined how the students' perceptions of their future opportunities affect their demand for further education and in the choice of study fields. In the 1970s, graduates from the humanities and social sciences comprised of mainly Malays. The study analyzed the

reasons behind the high enrolment of Malays in this field as compared to the science and technical fields which was dominated by the non-Malays (viz., Chinese).

Wang's study covered only male students. She argued that the occupational and educational motivations of girls are influenced to a great extent by marriage and female role considerations. In general, the study conducted detected differences in attitudes between ethnic groups in their choice of further education. More specifically, the Malays showed relatively less enthusiasm for science streams (more relative enthusiasm for the arts and vocational streams), compared to non-Malays. This difference was attributed to governmental allocation of the relatively high achievers among Malays to the science stream in order to fill predetermined quotas. The allocation often resulted in reluctant Malay students being forced into this field of study. In addition, the reason for the lack of enthusiasm was that proportionately more Malay than Chinese boys thought the arts stream afforded good prospects for higher education and usefulness in the job market. Chinese boys, however, felt that the greatest drawback about the arts stream was the lack of job opportunities for its graduates.

The results obtained above are not surprising because: (i) it was much easier for a Malay to qualify for further education after form five, so the question of jobs was not so important; (ii) government scholarships were easily available to qualified Malays in any field; (iii) preferential recruitment of Malays into all levels of government and quasi-government services meant that Malay form five arts graduates have an easier time finding jobs than their non-Malay counterparts.

Wang argued that both Chinese and Malay students were aware of their differing opportunities in the job market. They were also well aware of the realities of educational selection and competition. Their attitudes towards different fields of study at both the upper-secondary and university levels reflected rational responses to the implications of government policies designed to promote the upward mobility of Malays as a group. Malay enthusiasm for scientific and technical fields relative to the liberal arts, was dampened by factors such as, the readily available of stipends and scholarships for Malays in all fields, preferential recruitment and promotion of Malays by government and quasi-government services, and the academically demanding and higher degree of competition in the sciences. At the same time, the non-Malays, well

aware of the greater opportunities for them in the growing private sector, were eagerly competing for places in the science and technical fields.

Governmental intervention is shown in the study by R.H. Warland et al. (1973). In a response to the question "Do you hope to continue your full-time education next year?", 92 to 97 percent of Chinese males answered yes as compared to 96 to 99 percent of the Malays. The differing percentages are a result of a strong tendency among the Chinese to perceive their community suffering from government's policy of special treatment to Malays.

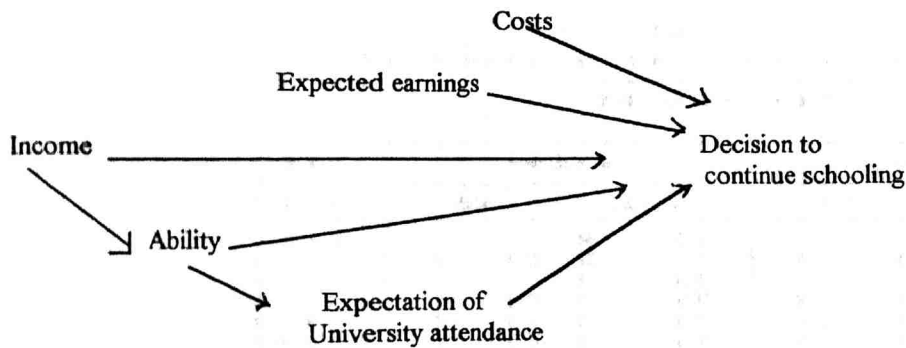
2.3.4 Economic or financial factors

Chew et al. (1990) revealed that the demand for higher education was relatively inelastic with regard to price increases.

Wang B.C. (1980) used a model (fig.2.2) based on the economic theory of private decision making (theory of cost-benefit analysis in education) to study a form five student's decision whether to go to form six is affected by:

- a. costs of a sixth form education
- b. the ability to afford the direct costs measured by the total family income of the student.
- c. expected benefits of a sixth form education
- d. the perceived probability that one will pass the certifying examination at the end of two years of form six. (This part has been discussed in the section under Structural or Institutional factors).

Fig.2.2 - Factors in Educational Decision Making (Wang B.C. 1977)



Wang explained that the costs of a sixth form education included both the direct costs of form six which were the same for all and were minimal compared with the indirect costs in forgone earnings should the student take a job instead of going to form six. Thus, the study shows that:

i) expected pay after form six has a positive effect on male students' choices of form six over taking a job. Table 2.5 indicate the desire to continue schooling is influenced by the expectations of high post-form six pay in all groups except Chinese girls (correlation close to zero).

ii) family income has a significant, direct effect on the decision to continue form six among most sex and ethnic groups, with the exception of Malay boys (Table 2.6).

Table 2.5 : Effect of expected pay after form six on choices between further schooling and working.

Expected Pay after Form 6 (\$)	Preferred Form 6 over \$200 Job (%)							
	Male Students				Female Students			
	Malays		Chinese		Malays		Chinese	
149 or less	62	(45)	56	(36)	69	(45)	35	(60)
150-199			52	(77)			25	(96)
200-249			52	(128)			34	(92)
250-299	73	(41)	54	(61)	38	(21)	34	(44)
300-349	83	(64)	64	(61)	74	(68)	29	(70)
350-399	81	(52)	65	(34)	63	(30)	45	(33)
400 +	80	(82)	80	(40)	81	(36)	27	(30)
Total prefer- ring form 6 (%)	87.1	(284)	57.9	(439)	68.0	(200)	31.4	(446)
Correlation between choice of form 6 over \$200 job and expected pay after form 6:								
Kendall's τ_c			.13	.14	.11	.08		
P			<.05	<.01	<.10	N.S.		
Correlation between strength of desire to continue into form 6* and expected pay after form 6:								
Kendall's τ_c			.13	.10	.11	.07		
P			<.005	<.01	<.05	<.05		

NOTE. — N's in parentheses.

* Defined as follows: 0 when response to the question, "If you are given a choice between taking a \$100-a-month job and going to form 6, which would you choose?" is "Take the job"; 1 when the respondent chooses a \$200 job (but not a \$100 job) over form 6; 2 when a \$300 (but not a \$200 or \$100) job is chosen over form 6; 3 when a \$500 job is rejected in favor of continuing into form 6. The questionnaire did not pose choices between form 6 and any job over \$300, as it is highly unlikely for a form 5 graduate to start with a salary of over \$250.

Source: Comparative Education Review, June 1980, pp.S147-149, Table

Table 2.6 : Effect of income on strength of desire to continue into form six, ability held constant

Average LCE Grade ^b	Malays		Chinese	
	Males	Females	Males	Females
2.49 or better	.17 (29)	.58 (7)	.38*** (65)	.44*** (37)
2.50-3.49	.02 (52)	.48** (16)	.30*** (57)	.28*** (57)
3.50-4.49	-.11 (45)	-.08 (33)	.34*** (78)	.28*** (52)
4.50-5.59	.01 (69)	.19** (48)	.40*** (79)	.35*** (78)
5.50-6.49	.19** (82)	.28*** (59)	.14* (88)	.04 (86)
6.50-7.49	.21 (25)	.02 (33)	.11 (60)	.23*** (74)
7.50 or worse			.48** (15)	.02 (63)

NOTE: —N% in parentheses.
 * See asterisked note to table 1.
^b The mean score for the four core academic subjects taken by nearly all students in the national lower certificate of education (LCE) examination at the end of form 3: general mathematics, general science, history, and geography.
 * $P < .10$.
 ** $P < .05$.
 *** $P < .01$; no asterisk indicates lack of statistical significance at $P = .10$.

Source: Comparative Education Review, June 1980, pp.S147-149, Table 2.

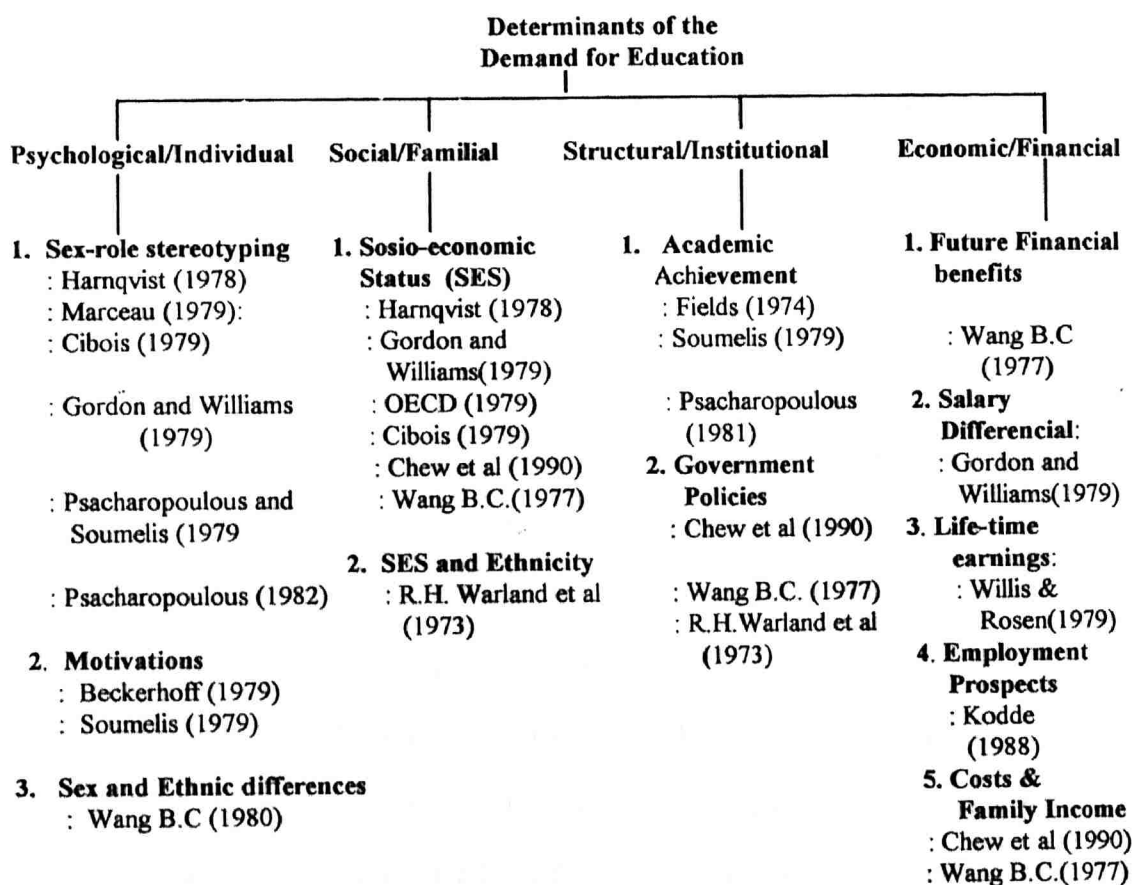
2.4 Statement of Issues

2.4.1 Summary

Figure 2.3 gives a summarized review of the literature by the principal factors influencing the demand for education.

Although an attempt is made to classify Malaysian studies according to Marceau's classification, it was not possible to distinctly separate the factors

Figure 2.3 : Determinants of the Demand for Education
- Summaries of Case Studies.



because one factor, ethnicity coupled with governmental intervention, seems to be a major influence in most categories. Government policies seems to be quite a strong influencing factor in Malaysia. Although there are pleural societies in other countries, not many studies were made on ethnicity, unlike the Malaysian studies. However, the findings were united in stating sex and sex-role stereotyping as an important issue in the influence of educational choice. Social norms seem to

dictate what girls or boys should do for their future. The studies show that SES factors do influence the demand for further education. Students from higher SES group aspires for higher educational levels while the lower SES groups select employment due to financial constraint. Perceived future financial benefits, life-time earnings and employment prospects are quite strong influencing factors on the demand for education and educational choice in all the studies stated. Perceived returns or benefits of further education was clearly a strong motive in the both International and Malaysian studies. However, it was found that the influence was not significant in Chinese girls and Malays on the whole. The situation is likewise for academic achievement or ability. The results indicated that the insignificance is due to social norms and governmental policies. Family income is a sizeable factor of influence except for the case of Malays in the Malaysian studies.

In most of the OECD (1979) reports, descriptive statistics and measures of association were used. The factors influencing demand were studied by means of direct questioning, and the analysis is complicated by the different sets of closed questions used in different enquiries reported. However, several

aspects of demand are bound to be unfortunately not covered equally by the country studies.

(Psacharopoulos and Soumelis (1979), analyzed the demand for education by means of multivariate analysis and taking the maximum likelihood estimates of the yes-no student's decision to continue or not. In the analysis of the determinants of demand for upper-secondary education in Portugal, likewise Psacharopoulos (1982) used the same method of analysis. Kodde (1988) analyzed the demand for education in the framework of employment prospects using comparative statistics to derive the theoretical properties of the model he studied. He fitted a binomial logit model to a sample of educational choices. Willis and Rosen (1979) used a structural probit model to study the effect of life-time earnings on demand for education.

The Malaysian studies used comparative and descriptive statistics and measures of association in almost all the analysis.

Finally, in interpreting the results of these studies, one should bear in mind that a very select group is dealt with, that is, those who have reached the end of secondary education. Since prior selection has

already taken place, the fact that only the factors stated in this review have been noted for their importance in general, does not mean that it is equally important to each individual. Besides, the fact that a given factor has been less important than others in determining the decision to continue does not necessary mean that this particular factor is unimportant.

2.4.2 Statement of Principal Objectives.

A basic element in formulating educational policy is understanding the demand for education. This element is important in developing countries where the satisfaction of individual demand for further education can sometimes override manpower considerations. Therefore there must be a balance between individual satisfactions and manpower requirements of the country.

Past research has emphasized the role of gender, SES, academic achievement and motivations, and financial or employment expectations, on the demand for further education. In all the studies, these factors seemed significant in determining the choice of education. However, in the Malaysian studies, ethnicity

and government policies contribute to the pool of factors which determine demand for education.

In this study, an attempt is made to study the impact of the factors affecting educational choices as categorized by Marceau (1979). The research is done due to a keen interest to discover the trend of choice selection of students in the 1990s, after the implementation of the new secondary school curriculum (KBSM)³¹.

Specifically, the objectives are:

1. Students' aspirations

- a. To study the aspirations of the students after their secondary or higher education in relation to the science or arts field.
- b. The perceived future earnings of the students will be examined. The analysis will assess the distribution of the student's perceptions among both gender and the three major ethnic groups with the intention of examining whether their aspirations and perceptions has any influence on their educational choice.

³¹ The first batch of upper-secondary KBSM students graduated from form five in 1993.

2.The Determinants of Educational Decision and Choice:

- a. To study the educational decisions and choices of the students after form five and the reasons behind their decisions. The decisions and choices will also be assess by gender and ethnicity.
- b. To analyze quantitatively the determinants of educational choice by taking estimates of a choice model by means of maximum likelihood (logit model).

3. Science and Technical Versus the Arts Field

- a. To study the factors which influence students' choice in relation to the Science and Technical versus the Arts Fields by taking estimates by means of maximum likelihood (logit model) .