

## CHAPTER 7

### CONCLUSION & POLICY IMPLICATIONS

#### 7.1 Introduction

Education in Malaysia has gone through a lot of changes during the past decades. From the Second Malaysia plan onwards the overriding objective has been the elimination of poverty and the correction of disparities between different groups of the population, so as to rectify disparities and imbalances in the fields of social, economic and educational development of the country. Education has played and will continue to play an important role in the development process of the country to meet national aspirations and needs, in particular to meet growing Bumiputera aspirations and the country's increasing middle- and high-level manpower needs. Malaysia needs to rely on greater skills and better technology as primary sources of economic growth. The emphasis of education thus, in the 1990s, is towards human resource development and promoting a science and technology culture necessary for a modern industrial society.

The principal objective of this study is to look at students' aspirations, educational decisions in relation to further education and educational choices in relation to science and non-science fields of study. The idea is to examine if the aspirations and educational choices of the students are in line with the nation's aspirations of building an industrial society based on science and technology. This study examines the determinants of the decision to continue further education, looking at the various factors that could influence the decisions of the students. These factors are based on Marceau's (1979) model and are categorized into four groups - psychological or individual, social or familial, structural or institutional and economic or financial. The determinants of educational decision were examined by means of maximum likelihood. The estimates of the choice model were taken by fitting a logistic regression. Likewise, the determinants of the choice of science (and technical) or arts fields were examined within the framework of Marceau's model by means of maximum likelihood.

## **7.2 Summary of findings**

Students' perception of the importance of education for the future can be examined through their

aspirations or desired professions which shows, indirectly, their expected involvement in the future labour market. This study found that the three highest occupational groups to which students aspire are: a) professional, technical and other workers, b) service workers and c) sales workers. A higher percentage of boys than girls in this study opted for occupations in the science and technical fields; as architects, engineers, technologists and related technicians and medical, dental and veterinary workers. More girls than boys opt to be teachers, jurists, accountants, auditors and creative artists.

When the aspirations or desired professions of the students was studied by considering the three major ethnic groups, it was found that the highest percentage of those selecting the science and technical fields are the Indians (45.9 percent), followed by the Chinese (31.0 percent) students. The percentage was least among the Malays (22.6 percent). On the whole, the desired occupations (aspirations) indicated that the science and technical field is not as widely chosen as the arts field. Overall, 27.8 percent of the students desired the science and technical occupations. The target of 60 percent involvement of students in this field by the year 2020 has clearly yet to be reached, at least in the case of Negeri Sembilan.

Students' educational choices and the factors that influence their decisions are analyzed in this paper. By doing so, it is hoped that the factors that influence these educational choices may be subjected to policy manipulation in order to affect changes in students' decisions in line with of national aspirations.

In analysing the students' educational decision to continue further education or not, it was found that 79.8 percent of the students wished to continue their education after form five and 20.2 percent discontinue and unsure. Among both the boys and girls, the highest percentage desired to pursue education in a local university. Very few selected to continue form six, although a higher number of boys (22.2 percent) chose form six education as compared to girls (15.0 percent). The rest wished to continue by enrolling in a college or private institution of education, go abroad or others. By analysing according to ethnic groups, the highest percentage of the Malay students desired to go to a university (72.0 percent). This is not surprising. Preferential access to universities and special financial support is part of the governmental policy to build up Malay enrolment in the universities in Malaysia. At this level, the Malay students are offered places in matriculation studies and diploma courses after their

SPM. Among the universities in Malaysia, only *Universiti Teknologi Malaysia* (UTM) offers places for diploma courses to non-Malays. Among the Chinese, the highest percentage desired to enter a college or private institution of education (37.4 percent) although a high number chose form six education (26.1 percent). The highest number of Indian students (45.8 percent) desired to enroll in a university and 26.4 percent desired to continue in form six, college or private institutions. The decision to continue education is influenced by students' perception of structural opportunities offered by society or the labour market. This study found that on the whole, students (irrespective of gender or ethnic groups) perceived that by furthering their education, they will gain better employment prospects (45.2 percent) although a high percentage do so because of the wish to improve their educational standards and expand knowledge for self-satisfactions (25.3 percent). Although the perception of higher financial gains (or higher salary) was not selected as the main reason for continuing education, it does not mean students do not perceived high earnings as there is a positive correlation between better employment prospects and future earnings. In most likelihood the reason could be that by gaining better employment prospects through education, the students find that they can expect better financial gains or in terms of salary, they would earn more than without furthering

their education. The main reason students decide to discontinue further education is because they desired to enter the labour market or obtain a skill through employment (47.1 percent). The lack of financial resources (probably being in a low-income family) and likelihood of failing the SPM examination (17.6 percent) were also part of the reasons for students who decide to discontinue education. Finally, for this section on the decisions of the students, it was found that the students who decide to continue further education had high aspirations although only 31.0 percent desired to enter professions in the science and technical fields. Among those who indicated a desire to discontinue, 18.2 percent wished to enter the science and technical fields. Comparing this to national aspirations, Malaysia has yet to achieve the targeted 60 percent involvement in the science and technical fields.

This study examined the perceived earnings or earnings expectations of the students in relation to the decision to continue. Most students are aware of the high correlation between education and earnings. Among the students who indicated that they would continue into further education, only 2.7 percent perceived earnings of RM200-500 upon completing further education. Most of the students expected much higher earnings. More than one-third (37.9 percent) of the students expected to earn in

the range of RM501-1000 (37.9 percent), 21.9 percent in the range of RM1001-1500 and 19.8 percent in the range of RM1501-2000. The findings indicate that the students' perceived higher earnings when they have the intention to continue education.

This study also examines some correlates of the decision to continue further education. It was found that a high percentage of the students who decide to further education have fathers who had at least upper-secondary education and mothers who had at least primary schooling. The occupations of these fathers are low on the social scale, while most of the mothers are housewives. Most of the students come from families with 4 to 5 siblings. Most students reported that their parents always encourage them in their studies irrespective of gender, ethnic groups or family income groups. On the whole, the greatest influence in the students' life is the mother.

In the analysis of the determinants of educational choice by taking logistic regressions, two areas were considered. Firstly, the determinants of the decision to continue further education were analyzed. Secondly, the determinants of the educational choice in terms of Science and Technical or Arts field were



analyzed.

In the analysis of the determinants of the decision to continue further education, gender, father's education, family size, form four grades and stream are found to be significant. Among the students from urban schools, father's education and stream are found to be significant. Among the students from rural schools, gender, father's education, school grades and stream are found to be significant. Taking regressions by gender show that among the male students, father's education, stream and family income are influencing factors in the decision to continue whereas among the female students, father's education, school grades and family income are the influencing factors. Estimates were also taken among the ethnic groups and it was found that among the Malay students, gender, family size and school grades are the significant factors in the decision to continue. Among the Chinese students only father's education is significant. They were no significant factors of influence among the Indian students (perhaps the sample size is too small for the analysis).

In analysing the students' educational choice in terms of the science and technical or arts fields, the regression results show that gender, father's education, school grades and expected earnings after SPM



are significant variables. Among the urban students, only father's education is significant and among the rural students, school grades and expected earnings after SPM are the influencing factors. Analysing by gender shows that among the male students, father's education, school grades and expected earnings are significant factors whereas among the female students only school grades seem to influence the choice of the science and technical field. Taking regressions by ethnic groups show that among the Malay students only expected earnings seem to influence their choice, while among the Chinese students, father's education and school grades are the two influencing factors. However, among the Indian students, being male increase the propensity to select the science and technical field.

### **7.3 Conclusion and Policy Implications**

The findings in this study provide some clues in terms of policy directions or programmes formulation aimed at influencing the demand for education. For instance, sex-role stereotypes remain an important factor in the determination of educational decisions. The study found that boys are more disposed towards occupations that are classified as "male professions". They are also more desirous of entering the science and technical fields than the girls. However,

the results by logistic regressions indicate that being male does not necessary increase the propensity to further education. This study shows that the girls are more desirous of furthering education while more boys desire to enter the labour market. Seeing that more girls intend to pursue further education, special programmes can be formulated to encourage girls to enter the science and technical fields. Groups in control of reward structures in society therefore have to discard any sexual discrimination and stratification with respect to job opportunities for women.

The study pointed out that students in rural schools now have a higher propensity to continue studies. Because of the realization of that education can provide a way out of the vicious circle of their family traditions (taking on the same occupations as their parents and grandparents) most of them are determined to study. Government efforts in upgrading rural schools are not a wasted effort. Policies designed to promote the upward mobility of the Malays have changed much of their attitudes towards desiring education. However, the study found that Malay students tend to perceive of their labour market involvement in terms of occupations that are not in the science and technical fields. The Chinese and Indians are still more disposed towards the science and technical fields where the Malays are least

represented. Attitudes towards this area, perhaps, have not changed much among the Malays despite the government efforts to increase their representation in this field. As such, policies could be formulated that would promote more interests in science and technical education among *bumiputera* students. For instance, scholarships should be reserved primary for science and technical education only or tuition fees for science and technical education could be lowered to encourage more *Bumiputera* participation. However, the root of this problem is that regardless of years of school attendance, students' attitudes towards mathematics (which is highly related to the science and technical fields) have not changed, especially among the *Bumiputra* students. Either they have been poorly taught or students were not assisted to develop a positive attitude and the affinity towards mathematics. In such a situation, educational policies should be made to increase the quality of the teaching of mathematics in schools and to instill the love of the subject in students, particularly in groups which have low affinity towards it.

However, one positive indication from this study is that being in the science stream seems to influence the decision to continue further education on the whole and among both boys and girls. Possibly, by being in the science stream gives the students a greater

sense of confidence in achieving a higher standard of education. Promotional criteria to form four after the PMR could be formulated to admit more students into the science stream rather than limiting the numbers enrolled. It should be noted that although students qualify for the science stream in the present education system, a lot of students change streams due to the perception that courses in the science stream are "tougher or more difficult". Students at this age need to be channeled into the science stream through the provision of sound advice and career counseling. However, the government has put in efforts to encourage students to enter this field by introducing them to science at a younger age (i.e. at the primary school level). This step taken greatly enhanced the understanding of the sciences in students and will remove any misconception of the "difficulty" of learning science in later years.

The study indicates that a larger family size reduces the propensity to continue further education. This factor influences the decision of the Malay students. Special financial subsidy could be provided for students from large families and older siblings in these families. They are normally the ones who discontinue education to help contribute to family income by entering the labour market, or discontinue to relieve the family of financial support towards their

education in sacrifice for younger siblings. The present educational system provides financial aids to low-income families (with the assumption that low-income and large families are inter-related).

High perceived earnings seem to propel the students to desire further education and to chose the science and technical fields. The analysis indicates that this factor is a significant influence among the rural students, the boys on the whole and Malay students. Students who expect high earnings are more willing to invest in further education and this expectation encourage them to enter the science and technical fields. Students can be directed towards science and technical fields by providing them with a positive perception of the reward structures in these fields.

In conclusion, if students are to be encouraged to enter fields where there are likely to be manpower shortages then government or policy makers have to adopt measures aimed at influencing the demand for education. In any way, the demand for skilled and semi-skilled labour in the science and technical fields has propelled the government to adopt measures (the Integrated Action Plan (IAP))<sup>3</sup> to ensure there will be

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<sup>3</sup> The IAP will see that all training under the supervision of departments and agencies are utilized fully to their maximum capacity and with a new emphasis on Science and Technology. The capacity of industrial training institutes will be upgraded and expanded. The government of Malaysia intends to

adequate supply of skilled and technical manpower by 2020. Moreover, education has increasingly been shown to be a basic and important element in carrying nations to higher levels of economic output. Malaysia thus needs to give priority to the field of education as an investment for her future and providing education for the fullest possible development of the individual and for the collective needs of society. To achieve this means policy decisions about school structure and educational programmes and requirements (for all groups: parents, teachers, students and the community on the whole) ought to be guided scientifically and by scientifically valid evaluations. It is recommended that educational research should be conducted more closely and continuously with educational policies. There should also be a greater exchange between the educators, planners and policy-makers, and the public so as to ensure a better understanding of the aspirations of individuals and society, in order that the demand for education be channeled to the required fields in line with national aspirations.

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develop a polytechnic in Sabah and five new industrial training institutions, namely in Selangor, Negeri Sembilan, Kedah, Sarawak and Sabah. Existing vocational schools will be upgraded into technical schools to ensure that training is skill-orientated. The IAP will draw up a programme that will facilitate the quick emplacement of school dropouts from the rural and remote areas into special skilled-training institutions where training will combine theory and practice in the fields of manufacturing and latest technology. Large companies are expected to expand their training and education programmes on a large scale and to provide exposure and skilled training in industries locally and abroad. All these will be implemented besides the provision of the government in the national budget for upgrading or privatising schools, universities and academic institutions.