

**ACADEMIC CREDENTIALS, STUDENTS'
CHARACTERISTICS, DECISION MAKING
BEHAVIOUR OF MALAYSIAN POLYTECHNICS
STUDENTS AND THEIR EDUCATIONAL
CHOICE**

by

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LIST OF ABBREVIATIONS

TVET	Technical and Vocational Education Training
SPM	Sijil Pelajaran Malaysia
ILP	Institute of Industrial Training
ADTEC	Advanced Technology Training Centre
JMTI	Japan Malaysia Technical Institute
MARA	Majlis Amanah Rakyat
IKM	Institusi Kemahiran Mara
KKTM	Kolej Kemahiran Tinggi Mara
MQA	Malaysian Qualification Agency
NKEA	National Key Economic Areas
PEMANDU	Performance Management Delivery Unit
DPE	Department of Polytechnic Education's
EPP	Entry Point Projects
EPU	Economic Planning Unit
NACAC	National Association for College Admission Counselling
UPU	Unit Pusat Universiti

BPKP	Bahagian Pengurusan Kemasukan Pelajar
IPTA	Institusi Pendidikan Tinggi Awam
ILKA	Institusi Latihan Kemahiran Awam
NVTC	National Vocational Training Certificate
MQF	Malaysian Qualifications Framework
UNESCO	United Nations Educational, Scientific and Cultural Organisation
MLVK	Majlis Latihan Vokasional Kebangsaan
NSC	National Skills Certification
SKM	Sijil Kemahiran Malaysia
MOE	Ministry of Education
DSD	Department of Skills Development
SMP	Skills Malaysia Partnership
NEM	National Economic Model
SRI	Strategic Reform Initiatives
NDTS	National Dual Training System
HRDF	Human Resources Development Fund

**KELAYAKAN AKADEMIK, CIRI-CIRI DAN TINGKAHLAKU MEMBUAT
KEPUTUSAN BAGI PELAJAR POLITEKNIK MALAYSIA DALAM
PEMILIHAN PENDIDIKAN**

ABSTRAK

Pemahaman tentang proses membuat keputusan pendidikan lepasan menengah oleh pelajar diperlukan untuk pihak pentadbir membuat strategi untuk merekrut pelajar sehingga menamatkan pengajian. Kajian ini bertujuan untuk meninjau pemilihan Pendidikan Teknikal dan Latihan Vokasional (TVET) pelajar politeknik Malaysia dari segi program pengajian terhadap ciri-ciri pelajar, kelayakan akademik dan tingkah laku membuat keputusan. Ciri-ciri pelajar, kelayakan akademik dan tingkah laku membuat keputusan dinilai melalui soal selidik; data termasuk status sosioekonomi (SES), aspirasi pendidikan, prestasi di sekolah menengah, penawaran program yang dikehendaki, peluang pekerjaan, *satisficing*, kesukaran keputusan dan carian alternatif. Kajian kes pemilihan peserta penerangan berurutan (quan-QUAL) telah dijalankan dengan menggunakan teknik persampelan berkadaran strata. Seramai 643 pelajar dari politeknik Malaysia yang mengambil bahagian dalam kajian ini. *Statistical Package for the Social Sciences* (SPSS) digunakan untuk menganalisis data yang dikumpul. Penganalisan data kajian ini telah menggunakan deskriptif, *multi layer crosstabs*, *independent sample t test*, *logistic regression*, *rank biserial*, *chi-square tests* dan *spearman's rho*. Keputusan menunjukkan bahawa majoriti pelajar politeknik konvensional Malaysia mempunyai latar belakang sosioekonomi keluarga yang rendah dan pencapaian akademik yang sederhana di sekolah menengah tetapi mempunyai aspirasi pendidikan yang tinggi tanpa mengira pemilihan pendidikan mereka terhadap bidang TVET. Terdapat juga

hubungan yang sederhana antara *satisficing* tingkah laku dalam membuat keputusan dan *maximizing* tingkah laku dalam membuat keputusan. Seramai 40 orang pelajar semester pertama mendaftar di politeknik konvensional Malaysia di Terengganu telah dipilih sebagai peserta kajian kualitatif. Empat orang pelajar dalam setiap kumpulan dari program kejuruteraan dan bukan kejuruteraan dengan tingkah laku dalam membuat keputusan yang berbeza (*satisficing* atau *maximizing*) telah dipilih daripada kalangan pelajar semester pertama untuk ditemu bual untuk mendapatkan maklumat lanjut mengenai proses membuat keputusan ke atas pemilihan pendidikan terhadap TVET. Secara keseluruhan, *maximizing* tingkah laku dalam membuat keputusan dan prestasi sekolah menengah meramalkan pemilihan pendidikan pelajar politeknik Malaysia terhadap bidang TVET. Selain itu, kajian ini juga mendedahkan faktor-faktor lain yang berkaitan dalam proses membuat pemilihan pendidikan pelajar politeknik Malaysia seperti kekurangan maklumat dan pengaruh orang lain.

**ACADEMIC CREDENTIALS, STUDENTS' CHARACTERISTICS,
DECISION MAKING BEHAVIOUR OF MALAYSIAN POLYTECHNICS
STUDENTS AND THEIR EDUCATIONAL CHOICE**

ABSTRACT

An understanding of the decision making process of post secondary education by students is needed for administrators to successfully recruit and retain students. This study seeks to provide research findings on Malaysian polytechnics' students educational choices regarding Technical and Vocational Education Training (TVET) in terms of enrolment programme with students' characteristics, academic credentials and decision making behaviour. Student characteristics, academic credentials and decision making behaviour were assessed via a self-report questionnaire; data included socioeconomic status (SES), educational aspirations, performance in secondary school, availability of desired programmes, employment opportunities, satisficing, decision difficulty and alternative search. A participant selection (quan-QUAL) explanatory sequential case study was carried out using a proportional stratified sampling technique. There are 643 students from Malaysian polytechnics who participated in this study. The Statistical Package for the Social Sciences (SPSS) was used to analyse the collected data. Descriptive, multi layer crosstabs, independent sample t test, logistic regression, rank biserial, chi-square tests and spearman's rho were conducted to analyse the data. The results suggest that majority of Malaysian Conventional Polytechnics students come from low socioeconomic status family background with low parental education level, low total household monthly income and performed averagely in their secondary school but have high educational aspirations regardless of their educational choice on TVET. There is also

a moderate correlation between satisficing decision making behaviour and maximizing decision making behaviour. 40 first semester students enrolled in Malaysian conventional polytechnics in Terengganu were chosen as the participants of the qualitative study. Four students in a group from each respective engineering and non engineering program with different decision making behaviour (satisficing or maximizing) had been selected from amongst the first semester students to be interviewed to gain more information on the decision making process of their educational choice on TVET. Overall, the study concluded that maximizing decision making behaviour and secondary school performance are significant predictors of Malaysian polytechnics students' educational choice on TVET with revealing other related factors in the decision making process of Malaysian polytechnics students in their educational choice such as lack of information and influence of others. Finally, the study reported the fundamental contributions to the knowledge bodies as well as the key conclusions.

Chapter 1

INTRODUCTION TO THE STUDY

1.1 Introduction

Having the misperception of technical and vocational education training (TVET) offering minimal career opportunities, thus causing students in Malaysia would make TVET as their last option (Tenth Malaysia Plan 2011-2015, 2010). Thus there is a need to alter this misperception as TVET does provide a practical solution for individual to discover their actual abilities. While in developed countries, TVET are the favourite alternatives for students looking forward to future success in a profession (Tenth Malaysia Plan 2011-2015, 2010).

Every year, 22 per cent or 100,000 SPM holders join the labour market in the absence of ability preparation (Tenth Malaysia Plan 2011-2015, 2010). TVET would be able to provide these individuals with practical skills which could be applied in their workplace, thus increasing their opportunities for a better career even without post secondary academic qualification. In Malaysia, the Department of Skills Development (DSD) is the only organisation in establishing and recognising the TVET curriculum quality. The Malaysian Skills Certificate (SKM) issued is acknowledged for admission into the civil service and post secondary education institutions. However, TVET in Malaysia is not that well received, and with this, the facilities that provide TVET would have to be enhanced. These facilities would have to focus on ways to improve the features of TVET in order to attract the potential

students, industries and stake holders. These measures are believed to increase faith and inspire more school graduates to continue their learning in TVET.

At the present time, most of the post secondary level TVET providers in Malaysia are government funded institutions. These include 36 polytechnics and 81 vocational colleges under Malaysia Ministry of Higher Education, while Malaysia Ministry of Human Resources has 23 Institut Latihan Perindustrian (ILP), eight Advanced Technology Training Centre (ADTEC) and one Japan Malaysia Technical Institute (JMTI). Besides that, Majlis Amanah Rakyat (MARA) has also 13 Institusi Kemahiran Mara (IKM) and ten Kolej Kemahiran Tinggi Mara (KKTM). All of these post secondary education institutions are offering diploma level of TVET to SPM holders.

According to Malaysian Qualification Agency (MQA), diploma program is at Level Four in Malaysian Qualification Framework: Qualifications and Level (2011) regardless of the sectors that they are in: skills, vocational and technical or general academic. This resulted student recruitment become increasingly competitive among these TVET post secondary education institutions.

In addition to that, local industry market does affect the trends in education, as in students' choices. Students more and more often choose fields of studies that are required by the industries rather than just obtaining a higher education diploma (Mazovian Centre for Regional Survey, 2013). However, the lack of information regarding the demand for certain educational profiles are underrepresented in the labour market, there are still too many unemployment among graduates in particular disciplines of studies. The overproduction of graduates in these disciplines of studies was worsen by the lack of fit between the structures of supply and demand of the

particular disciplines of studies (Mazovian Centre for Regional Survey, 2013), which then can be lead to education inflation as proposed by Dore (1976).

It is crucial to introduce changes in the fields and programmes of studies offered by post secondary education institutions to arrest this matter. There should be a reduction in the enrolment of students in fields of studies which there are over production, and increasing the number of student recruitment in the fields in which there are shortage in the industry market would tackle the risk of education inflation (Mazovian Centre for Regional Survey, 2013). In 2008, the Ministry of Human Resources announced a deficiency in labour of more than 700,000 skilled workers in the industries of construction, agriculture and manufacturing. It is estimated that requests for vocational skills will continue to increase. This is caused by the 46% of 3.3 million occupations that would be generated under the National Key Economic Areas (NKEA) by 2020 would demand vocational certificates or diplomas (Companies Commision of Malaysia, 2013).

On the other hand, marketing, faddism, ideology and politics prompted more than evidence in the instructional practices and programs adoption throughout the history of education (Slavin, 2008). Evidence based practice is emerging as an influential field inside the fields of professional applied social science and academic (Paynter, 2009). Evidence based education is about the basic change in the idea in regards to the connection between policy and practice in reality and academic research (Oakley, 2002).

This research could provide some of the evidences needed in the attempts of attracting more students into TVET. One of the most obvious use for the post secondary education decision making model is to help the administrators in post

secondary education institutions to advertise themselves more successfully to their future students (Vrontis, Thrassou, & Melanthiou, 2007). By understanding the decision making process in the selection of Malaysian polytechnics' students, a specific tailored promotion scheme could be drafted to attract more SPM graduates to consider Malaysian polytechnics as their priority in choosing post secondary education institution to pursue their studies. It is hoped that by attracting more students into TVET, this would solve the problem of over producing graduates in the academic field. Besides that, programmes of studies should consider the emergence of new professions and needs of the industry market. The Boston Consulting Group Report reported in June 2011, that the findings by Performance Management Delivery Unit (PEMANDU) indicated that by 2020, tourism, retail, health care and education lines in Malaysia will still be in demand while there will be an oversupply of TVET graduates in the electrical and electronics sector. An oversupply of TVET graduates is also expected in communications content and infrastructure sector.

It is also hoped that through this research, the academic credentials, students' characteristics and decision making behaviour among Malaysian polytechnics students that enrolled in different programmes will be identified accordingly. These findings should provide the TVET providers in Malaysia with an indication for future planning; in terms of programme offerings and the concentration of efforts.

1.2 Background of the Study

In some researches, students distinguished hurdles in making decision because of the array of programmes, the large amount of information to analyse, especially on same programmes, insufficiency of experience in making decision and the insufficiency of

help in the process (Szekeres, 2010). Making decision on selecting an institution and programme is a complicated matter, the number of available information at hand made it more difficult to a greater extent (Briggs, 2006) and it has a high element of risk for the consumer when what education providers are selling is a service which cannot be sampled and which students may be committed to for several years, so (Moogan, Baron, & Harris, 1999).

It is believed that rational consumers collect as much information as they could about the product and suppliers and that potential education buyers fall into this nature (Szekeres, 2010). However, students do not actually suit the rational consumers model. They do not gather published information on many programmes and intentionally compare the pros and cons of each. Instead, they favour certain programme and just decide between one or two variations of this. Rationality is not completely that which is believed in traditional thinking on the allocation of information and students' choice (Hesketh & Knight, 1999). While some researchers have shown that students have a sensible economic recognition of the value of post secondary education, there is little affirmation to propose that rationality extends to the choice of institution (Baldwin & James, 2000).

Ronald Dore (1976) discusses the relationship among education, qualification and development. The diploma disease is an ordinary process of academic credential earning. The outcomes of diploma disease in developing countries were thought to be especially disgraceful. Those processes are results from modern bureaucratic organisations that emphasize academic credential in hiring employees, especially in general education subjects. Hence, the value of the academic credential relies on how

many other people own it. One effect of this is academic credential escalation, a rise in the academic credential needed for a specific career (Pelletier, 1996).

It is also a norm now that employees are over qualified in term of academic credential for their occupations. Degree holders are working as administration clerks or even sales representatives. Diploma holders are working as promoters in the shopping complex. As the average educational attainment of the labour force rise, there is a sign that the job structure has not been able to take up the increased supply of educated employees into their conventional occupational structure, and a state of over education has revealed in the industry market (Tsang & Levin, 1985). Over education has been commonly defined in one of the following three ways: a decline in the economic position of educated individuals as compared to historically higher levels; under fulfilled expectation of the educated with respect to their occupational attainments: and finally the possession of greater educational skills than their job requirements (Rumberger, 1981). One of the measures suggested by Dore (1976) to overcome this phenomena is by transforming post secondary education institutions into in career learning in special educational institutions (TVET).

In many countries to the present day TVET is classified as second best education in many countries even till today (Ruth & Grollmann, 2009). Parents who can afford it seldom send their children to a vocational school. Most of them favour general education. TVET has yet to develop in terms of attractiveness, quality and image within the industrial communities and society for it to become an interesting option for young people and their parents when choosing educational pathways. Young people and their parents, whenever they have the chance, opt for general higher education over TVET. This has to do with TVET's main image as a second best

educational career and the frequent low level attractiveness, which is diminished by the explanation (often from international institutions), that TVET should be extended to cater economic development opportunities for the less better off and the estranged students.

The image and the attractiveness of TVET has been a problem for decades in most European countries (Ruth & Grollmann, 2009, 44). Policy makers and practitioners are concerned about students and their parents opting for general education over vocational education and training. TVET is often seen as a second choice, and generally students who enrol into vocational schools are those with lower achievements.

Despite the Department of Polytechnic Education's (DPE) vision to be Malaysia's main and number one provider of innovative human capital through transformational education and training for the global workforce by 2015, more and more diploma graduates would still decide to further their study to a higher level of credential after obtaining their credential in Malaysian Polytechnic. The number has increased from 8.7% in 2008 to 21.1% in 2012 (Ministry of Education Malaysia, 2012a).

The Entry Point Projects (EPP) 5 under the Malaysia National Key Economic Areas (NKEA) lay down projects that aim to increase private skill training provisions, which could increase the number of skilled workers to 50% by 2020. Currently, 77% of the labour force in Malaysia have eleven years of education but only 28% of the jobs are in the higher skill category. The Malaysia Economic Planning Unit (EPU) estimates that by 2020 the labour force in the higher skill category will only increase by 4%. However, the government's aim is to reach 33% by 2015 and 50% by 2020.

This statement is supported by the Grant Thornton International Business Report (IBR) 2013 that reveals that 62% of businesses in Malaysia are finding it hard to source skilled workers, which is ahead of Singapore (61%) but definitely, well above the global average of 39%. The survey has also revealed that in the ASEAN region, the inadequacy of specific or technical skills is the most crucial element for businesses as shown in Vietnam (86%), followed by Philippines (76%) and thirdly in Malaysia at (68%). This is closely followed by Singapore (66%) and also business owners globally (64%). In order to achieve this request, 50,000 additional places in vocational education need to be created each year.

In Malaysia, a variety of post secondary educational choices are available for students. Research of post secondary educational choice provide insights into what is important to students and the results could be used to develop and implement an effective institution development plan (Moogan et al., 1999), particularly in student recruitment management. It also provides insights to post secondary education institution management on students' priorities and choice criteria. Furthermore, it provides information to prospective students on issues related to selection of post secondary education institutions, while government and regulatory bodies may use the insights in framing the future policies for management institutes especially in Malaysia.

This research is meant to help post secondary education institutions understand the decision making process involved in students' choice of post secondary education institution, thereby aiding in the recruitment and enrolment of students. As stated by Plank and Chiagouris (1997), understanding the choice process of a post secondary education institution is an instrument with high potential for developing post

secondary education institution marketing strategies. Institutions of post secondary education need to understand how students select post secondary education institution in order to attract best students (Kotler & Fox, 1995).

Malaysian polytechnics management needs to market their institution and establishes a unique difference in order to highlight their strengths thus giving the students a reason to choose polytechnic education. For post secondary education institution strategists (and teaching/ learning officers and marketers), it is quite reassuring that student choices can be influenced (Wilkins, Shams, & Huisman, 2013). An understanding of the decision making process of post secondary education by students is needed for administrators to successfully recruit and retain students.

The study provide additional information to polytechnics' management on students' priorities and choice criteria and also provide information to prospective students on issue related to selection of post secondary education institutions. Meanwhile, the government and regulatory bodies may also use the additional information in framing future policies for management institutes especially in Malaysia. Education is a very complicated high contact service requiring processes that employ very proficient and helpful human resource at all levels of the organization. Through surveying newly enrolled students of Malaysian Polytechnics, a greater understanding of the students' decision making process will be achieved.

1.3 Problem Statement

The complication of the decision making process in choosing a post secondary education that the students face is thoughtful. Astin, Parrott, Korn and Sax (1997) found out that students are applying to more colleges as a group as compared to

students 30 years ago. While in 2011, according to a study by the National Association for College Admission Counselling (NACAC) in the United States, more potential college students are applying to a large number of schools than ever before (Clinedinst, Hurley, & Hawkins, 2011). NACAC found in its 2011 State of College Admission report, a quarter of freshmen who enrolled in college during fall 2010 applied to seven or more schools. That was an increase from both fall of 2008 and fall of 2009, when 22 and 23 percent of students applied to at least seven schools, respectively. For fall 2010, 77 percent of students applied to at least three schools.

While in Malaysia, students have the opportunity to apply to a number of post secondary education institutions after graduating from secondary school. Students will send in their applications to local public post secondary education institutions through the Unit Pusat Universiti (UPU) website. UPU now known as Bahagian Pengurusan Kemasukan Pelajar (BPKP) is a unit under the Ministry of Higher Education. It is responsible for managing and coordinating the admissions of students to local public post secondary education institutions. There are two categories of post secondary education institutions under the UPU website: (a) IPTA (Institusi Pendidikan Tinggi Awam)/ Politeknik Premier which consists of 22 institutions under it and (b) ILKA (Institusi Latihan Kemahiran Awam) / Politeknik Konvensional/ Politeknik METro/ Kolej Komuniti which consists of more than hundred institutions under it. There are also hundreds of private post secondary education institutions and other post secondary institutions under MARA and Ministry of Human Resource such as ILP, ADTEC, JTMI, IKM and KKTM that students can apply. On top of that, students are inundated with post secondary education institution characteristics to consider and plenty of sources of information to digest (Galotti, 1995). Adding to these complexity in the post secondary education

institution decision making process, students must search for and choose a post secondary education institution within a certain time period (Hossler, Braxton & Coopersmith, 1989).

Over the years, there are quite a numbers of research on post secondary education institution choice conducted on prospective students internationally (Farley Ordovensky, 1995; Holdsworth & Nind, 2006; James, 1998, 2002; James, Baldwin, & Mcinnis, 1999; Kern, 2000; Sewell & Shah, 1967, 1968). In Malaysia, post secondary educational choice research had also been conducted on prospective students (Ahmad Zamri & Nordin, 2013; Ancheh, Krishnan, & Nurtjahja, 2007; Mohar, Siti Nor Bayaan, Misyer, & Ravindran, 2008; Osman, Muhammad Tahir, & Andy, 2013; Sia, 2011; Wagner & Fard, 2009).

Chapman (1981) and Moogan et al. (1999) applies rational choice theory in their study of students' decision making behaviour of post secondary education. However, critics of consumer behaviour theory reprimand it for its belief that all decision making is rational and based on meticulous information processing (Maringe & Carter, 2007). Understanding the post secondary education decision making process is even more difficult because studies have been incapable to distinguish consistently the choice behaviour for a post secondary education institution.

Post secondary students who experience these difficulties may be incapable to compare the post secondary education institutions effectively or establish decision making strategies to choose post secondary education institutions that are expected to be crucial based on enrolment behaviour. This problem is increased by the insufficient of understanding of policy makers on the enrolment behaviour in making a post secondary educational choice. What is missing in research literature and

education policy on post secondary education institution choice is a prioritization on bounded rationality theory which can clarify on the cognitive restrictions of information processing and processing proficiency students have when faced with making a post secondary education institution choice (Govan, 2005).

Bounded rationality is a model to explain human decision making behaviour and it was developed as a reaction to rational choice theory (Jones, 2011). Bounded rationality is also believed to be able to provide another perspective of the cognitive restrictions of information processing and processing proficiency students have when making a post secondary educational institution choice. Previous studies have been focusing on applying rational choice theory in looking into the factors influencing students' choice in general academic post secondary educational institution and neglecting the perspective of the cognitive limitations of information processing and processing capability that the students have in TVET post secondary education institutions.

Throughout the years, research on post secondary educational choice in Malaysia has always been conducted on public universities (Ahmad Zamri & Nordin, 2013; Daud, Aidatulsima, Siti Shafiqah, & Suhaila, 2012; Rohaizat, 2004; Samsinar, Siti Rahayu, & Tan, 2003) or private universities and colleges (Ancheh, 2006; Ancheh et al., 2007; Faridah & Nooraini, 2006; Garma & Yoon, 2003; Mohar et al., 2008; Mohd. Aisamussin, Mohd. Zamri, & Muhammad Syafiq, 2008; Nurlida, Leow, Chen, Cheryll Lim, & Ng, 2007; Osman et al., 2013; Samsinar et al., 2003; Sia, 2011; Wagner & Fard, 2009) that offer programmes that are more towards general academic field. Most of the researches are more focused in identifying the factors influencing the prospective or current students in choosing their post secondary

education institution disregard the programme that they enrolled in. Among the researches, Rohaizat (2004) and Garma and Yoon (2003) conducted studies on final year management students and business undergraduate students respectively. However, there has been limited educational choice research on Malaysian polytechnics students.

On the other hand, Pimpa and Suwannapirom (2008) conducted a study aimed to determine factors affecting Thai students' choices of TVET. Farley Ordovensky (1995) also included post secondary vocational education programmes in his study to examine how institutional characteristics might best be changed in an effort to expand the number of enrolments. The general implication of these results is that there is a notable difference, both in individual characteristics and the effects of these characteristics, on enrolment decision across the diversity of available post secondary educational choices. Something worth taking into consideration is that even among two year college students; there are differences among students across programs which are too large to be disregarded. Whilst in South Africa, research on post secondary education institution choice had been conducted on students enrolled in economic and management science by Wiese, Heerden, and Jordaan in 2009. Briggs and Wilson (2007) and Briggs (2006) also conducted the research on undergraduates enrolled in accountancy and engineering programme in Scotland universities. According to the research by Briggs (2006), students from the different programme recognized the same top 10 factors as the combined group total, but with a different ranking of significance. This shows that there has been limited research on the decision making process of TVET post secondary education institution choice employed by the students from different programmes especially in Malaysia.

According to the Malaysia Education Blueprint 2015-2025 (Higher Education) by the Ministry of Education Malaysia (2015), the ministry aims to establish a system that is less focused on traditional, academic pathways but emphasises on technical and vocational training. It is a need for Malaysia to shift the main focus on university education as the only pathway to success, to one where academic and TVET pathways are both equally appreciated and improved. Thus, Malaysian government is investing tremendously in developing the TVET sector. Besides that, it is also the aim of the ministry to increase enrolment in the TVET sector over the course of the next decade. Among the efforts to increase enrolment in the TVET sector, Malaysian polytechnics offered engineering programmes including civil engineering, electrical engineering, mechanical engineering, petrochemical engineering, aircraft maintenance engineering and marine engineering. While, non engineering programmes also offered in Malaysian polytechnics including food technology, agro technology and bio industry, information technology, design and visual communication, commerce and hospitality. All of these statements supported the need for research on the decision making process of TVET post secondary education institution choice employed by the students from different programmes in Malaysia.

What are the factors affecting TVET post secondary educational choice? Students face the burden of collecting and analysing information, clarifying their own likings, and categorizing their prioritization before making their choice. Students need to be well informed about their TVET post secondary educational choice before making the decision. Some students do not find out information about TVET post secondary educational choice because they do not know the choices that they have. Often, when students actively try to seek out information, the information may be incomplete or complicated. Sometimes, the amount of information is so massive that students select

their TVET post secondary education institution nearest to them without researching further their choices.

There are three types of post secondary education institution choice model: combined models, economic models and sociological models. While economic models applied rational choice theory when investigating into students' choice post secondary education institution (Fernandez, 2010), sociological models on the other hand, explained a process that considers decision factors revealed throughout a student's life (Fernandez, 2010). The most important aspects from economic and sociological models in the decision making process form the combined models (Joseph & Joseph, 1998, 2000). Combined models integrate sociological views with rational choice theory which allows a large amount of analytical power on the model (Fernandez, 2010). Still, post secondary education institution choice model is insufficient stressing on bounded rationality theory which can enlighten on the cognitive restrictions of information processing and processing capability students have when faced with making a post secondary education institution choice (Govan, 2005).

Rational choice theory is a customary model used in the social sciences, especially in the field of economics and political science to understand individual behaviour (Jones, 1999). The theory depends on certain beliefs on how people make decisions. It is assumed that people make choices based on a process of identifying their preferences. They then start judging those preferences by assessing the costs against the benefits and lastly choosing the preferences to maximize their self interest. Making a selection based on one's self interest is said to be acting rationally, otherwise one is acting non rationally. Rational choice theory is more economic driven rather than considering the external and internal factors that affect the

decision making of post secondary educational institution from the cognitive and sociological aspects.

Simon (1955) is the first to criticize on the underlying speculation of rational decision making. The natural restriction of human cognitive and computational abilities makes rational decision making impracticable in its application. In summary, rational choice theory depends on few unstated, and mostly unjustified speculation.

In this study, instead of using the conventional rational choice theory, the researcher examines the relationship of satisficing in bounded rationality to decision making in explaining students' post secondary educational choice on TVET. This will provide additional information on the students' post secondary educational choice from another perspective that seldom has been explored by the existing researchers that is the cognitive limitations of information processing and processing capability students have. Contemporary explanations, applications, and measures of decision making behaviour based on satisficing are presented. In addition, the researcher examines whether satisficing explains individual decision making behaviour in students when they choose a TVET post secondary education institution. The conventional rational choice theory believes that the decision maker understands all the possible options, both at the moment of the decision and at any future point in time (Simon, 1983). Bounded rationality is believed to be able to provide another perspective of the cognitive limitations of information processing and processing capability students have when making a post secondary educational institution choice. Simon (1955, 1956, 1957) opined human are determined to make rational decisions but lack the knowledge and skill to make optimal ones. He identified the following limitations restricting people from employing rational decision making: (a) incomplete and

imperfect information, (b) complex problems, (c) limited ability of individual to process information, (d) time constraints, (e) competing preferences and goals. These boundaries which restrict human being, however well intentioned, from optimizing their choices.

There have been some numbers of researches based on the concept of maximizing and satisficing over the past years. The researches focusing on consumers include customer loyalty to providers of products and services (Lai, 2011); product design in a market (Bansal & Maglaras, 2009); online gift purchases made under a time constraints (Chowdhury, Ratneshwar, & Mohanty, 2008) and choices of mobile phone service contracts in Australia (Earl, Friesen, & Hatherley, 2011). Judges on judicial liability (Tsaoussi & Zervogianni, 2009) and students in their process of job searching (Iyengar, Wells, & Schwartz, 2006) have also been studied. While in education aspects, this concept has been applied on parents' decision making on their children's school of choice (Thompson, 2011) as well as African American and other students' decision making strategies used to select colleges (Govan, 2005). Both of these researches were conducted in the United States of America.

One of Malaysia's Polytechnics Key Performance Indicator is to ensure 50 percent of qualified SPM holders choose polytechnics as their priority in selecting post secondary education institution. Looking at the numbers of entrance to Malaysian polytechnics from 2010 to 2012, it is still far beyond reaching the target.

Table 1.1

Numbers of candidates passes SPM and entrants to Malaysian Polytechnics from 2010 to 2012.

Years	Numbers of Candidates Passed SPM*	Entrants to Malaysian Polytechnics (Diploma and Certificate)**	Percentage
2010	368, 559	41, 332	11.21%
2011	370, 396	39, 471	10.66%
2012	373, 250	37, 962	10.17%

* Educational Planning and Research Division, 2013

**Perangkaan Pengajian Tinggi Malaysia 2011, 2011

(Ministry of Higher Education Malaysia, 2012)

From the above discussion, this research is conducted as to provide a clearer picture on the decision making of Malaysian polytechnics students in their educational choice on TVET. By understanding their choices, a specific tailored promotion scheme based on their decision making behaviour could be drafted to attract more SPM graduates to choose Malaysian polytechnics as their priority institution among other post secondary institutions. It is also hoped that community will no longer perceive Malaysian technical and vocational education training (TVET) in general and Malaysian polytechnics in specific as a secondary option education.

Post secondary educational choice research has been conducted on the many factors that influence the post secondary educational decisions made by students (Kurlaender, 2006). Research has been conducted on racial groups (Ceja, 2006), women (D. Hossler & Stage, 1992; McDonough, 1997), and economic groups (Don Hossler, Schmit, & Vesper, 1999; McDonough, 1997) to determine factors considered by individuals when entering post secondary education. Research has also been conducted to determine whether friends, family, and high school personnel influence individuals to attend post secondary education (Don Hossler & Gallagher, 1987; McDonough, 1997). Characteristics unrelated to the individual but unique to the institution, such as cost and location, have also been studied (Kurlaender, 2006).

There has been limited research, however, on the decision making process students employ when choosing a post secondary education institution.

1.4 Objectives

The overarching aim of this research is to provide information and insightful understanding on the educational choice of Malaysian polytechnics' students in terms of programme enrolled and its relationship with academic credentials, students' characteristics and decision making behaviour. Accordingly, the specific objectives grounded this study as followed:

1. To identify the educational choice of Malaysian polytechnics' students based on academic credentials, students characteristics and decision making behaviour.
2. To determine the influence of academic credentials, students' characteristics and decision making behaviour in educational choice among the students in Malaysian polytechnics.
3. To identify the relationship between satisficing and maximizing decision making behaviour among the students in Malaysian polytechnics.
4. To investigate the decision making process of satisficing and maximizing Malaysian polytechnics' students in their educational choice based on academic credentials, students characteristics and decision making behaviour.

1.5 Research Questions

1. What is the feature of Malaysian polytechnics students' educational choice based on academic credentials, students' characteristics and decision making behaviour?
2. Do academic credentials, students' characteristics and decision making behaviour influence the variation of educational choice among Malaysian polytechnics' students?
 - 2(a) Do academic credentials significantly predict educational choice among the students in Malaysian polytechnics.
 - 2(b) Do students' characteristics significantly predict educational choice among the students in Malaysian polytechnics.
 - 2(c) Does decision making behaviour significantly predict educational choice among the students in Malaysian polytechnics.
3. What is the relationship between satisficing and maximizing decision making behaviour among Malaysian polytechnics' students?
4. How do the satisficing and maximizing Malaysian polytechnics' students make their educational choice based on academic credentials, students' characteristics and decision making behaviour?

Table 1.2 summarised the research foci, research objectives and research questions of this research.

Table 1.2
 Research foci, research objectives and research questions.

Overarching Aim of the Study	Research Foci	Research Objectives	Research Questions
To provide information and insightful understanding on the educational choice of Malaysian polytechnics' students.	1. To provide information the educational choice of Malaysian Polytechnics' students based on academic credentials, students' characteristics and decision making behaviour.	1. To identify the educational choice of Malaysian Polytechnics' students based on academic credentials, students' characteristics and decision making behaviour.	1. What is the feature of Malaysian Polytechnics' students' educational choice based on academic credentials, students' characteristics and decision making behaviour?
	2. To examine the Malaysian Polytechnics' students educational choice and its relationship with academic credentials, students characteristics and decision making behaviour.	2. To determine the influence of academic credentials, students' characteristics and decision making behaviour in educational choice among the students in Malaysian Polytechnics.	2. Do academic credentials, students' characteristics and decision making behaviour significantly contribute towards variation in educational choice among the students in Malaysian Polytechnics? 2(a) Do academic credentials significantly predict educational choice among the students in Malaysian Polytechnics. 2(b) Do students' characteristics significantly predict educational choice among the students in Malaysian Polytechnics. 2(c) Does decision making behaviour significantly predict educational choice among the students in Malaysian Polytechnics.
		3. To identify the relationship between satisficing and maximizing decision making behaviour among the students in	3. What is the relationship between satisficing and maximizing decision making behaviour among the students in

Continue ...

... Table 1.2 continued

	Malaysian polytechnics.	Malaysian polytechnics?
3. To summarize the decision making process of educational choice of Malaysian polytechnics' students.		
	4. To investigate how the Malaysian Polytechnics' students make decision in making educational choice based on academic credentials, students characteristics and decision making behaviour.	4. How do the satisficing and maximizing Malaysian polytechnic students make their educational choice based on academic credentials, students' characteristics and decision making behaviour?

1.6 Research Conceptual Framework

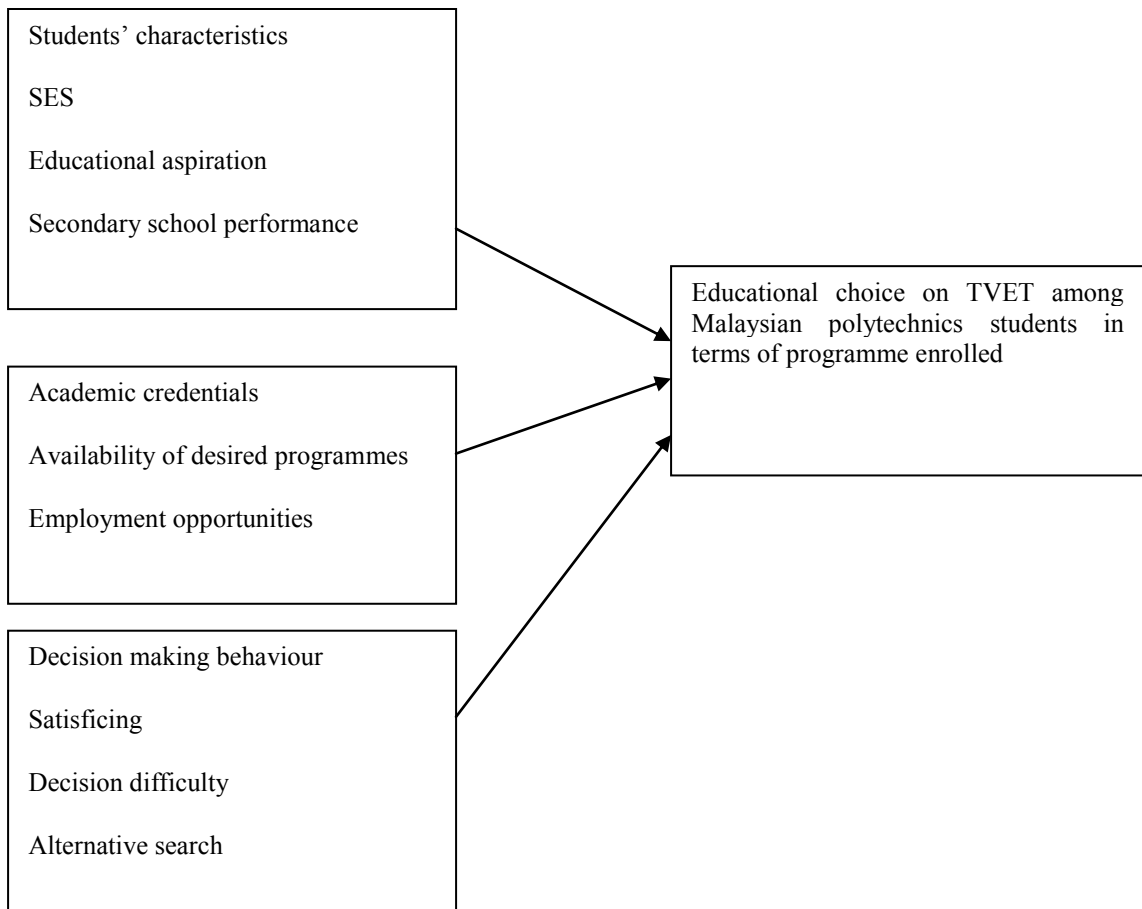


Figure 1.1
Research conceptual framework.

Research conceptual framework shown in Figure 1.1 shows the independent variables of the study are 1) socioeconomic status, 2) educational aspiration, 3) secondary school performance, 4) availability of desired programmes 5) employment opportunities 6) satisficing, 7) decision difficulty and 8) alternative search. There is one outcome measurement: educational choice on TVET among Malaysian polytechnics students. The educational choice are assessed from engineering and non engineering programmes offered in Malaysian polytechnics. Engineering programmes offered in Malaysian polytechnics include: civil engineering, electrical engineering, mechanical engineering, petrochemical engineering, aircraft

maintenance engineering and marine engineering. Non engineering programmes offered in Malaysian polytechnics include: food technology, agro technology and bio industry, information technology, design and visual communication, commerce and hospitality. At the end of this research is to identify the Malaysian polytechnics' students' educational choice based on students' characteristics, academic credentials and decision making behaviour.

1.7 Operational Definition

1.7.1 Educational Choice

Educational choice is a complex, multistage process during which an individual develops aspirations to continue formal education beyond secondary school, followed later by a decision to attend a specific college, university or institution of advanced vocational training (Hossler, Braxton, & Coopersmith, 1989). For the purpose of this research, educational choice is operationally defined as a post secondary educational choice on TVET in which the students choose after finishing their secondary education. It is assessed by the programme enrolled by the students in the post secondary education institution either engineering or non engineering programme.

1.7.2 Technical and Vocational Education Training (TVET)

TVET is understood to be an essential part of general education, a way of preparing for occupational fields and for effective participation in the world of work, an aspect of lifelong learning and a preparation for responsible citizenship, an instrument for promoting environmentally sound sustainable development and a method of