

Original Research

A Study of Malaysian High School Leavers' Dilemma in Choosing Varsity Courses

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Abstract

On an annual basis, data shows that there are numerous university and college students that fail to complete their courses and graduate with the intended degree or diploma in hand. The aim of this study is to explore the factors that influences the decision making of a student when it comes to choosing varsity courses, investigate how these factors can impact the students' decisions and provide recommendation on how the cognitive behaviour and academic excellence can be used to make a sound decision, setting the students for success in their varsity life. This research has narrowed down to three major factors which are personal, interpersonal and environmental. The study is conducted using a Likert scale method further expanding the factors into subdivisions for the participants to rank. The population (data set) for this survey is 50 students from all walks of life but concentrated in Klang Valley. The key findings from the study shows the most prominent factor are Personal factors. The second most influential item are Environmental factors. Interpersonal factors come in third. Concluding this research, it is prudent to obtain a bigger and robust data set. A future practical application of this research can be developed by a tool which further provides a systematic solution for all its users to yield the best potential and make the best-informed decision when furthering their education.

Keywords: Varsity, Interpersonal, Personal, Environmental, Cognitive Behaviour, Tertiary Education

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Introduction

The most crucial moment of a student's life is when they are in their senior year. The final year of being called a high school student. Aside from the many vital activities faced at this time such as major final examinations and completions of projects, the pressure and stress are truly immense because this will literally be the turning point in their lives where their future careers are decided. It is the time for them to buck up and decide what varsity courses are best suited for them to pursue which will eventually become their future career. There are many factors which influence this decision which can affect the outcome both positively and negatively. It is no small feat as the choice they make will determine the next 4 to 5 years, at least of their lives and that single choice alone can be either a fruitful experience or a painful one. With that being said, the unemployment rate is also closely related to this dilemma. The wrong choice of course taken by most high school students adds to the unemployment and underemployment rate of newly graduate students.

Malaysia Education System

Like most nations, Malaysians go through 11 years of a structured schooling academic system module in which everything is decided for students based on their academic performance. They are compelled to study subjects they may or may not like and sit through both minor and major examinations which serve as a benchmark of their academic performance. These are all basically a predetermined path one has to follow in the schooling system; of course, this is concerning only the common education facility that is available in the country not including several private institutions that reciprocates in a different educational stream. Having gone through the common educational system myself, I am considered lucky as I knew engineering was my tertiary path. There was no doubt that engineering was a passion of mine that I wanted to pursue. Some of my peers however faced tremendous woes as to what they were going to pursue post high school. That one itself is a tough choice. "What am I passionate about?"; "Do I take the same course as my friends?"; or "Do I pursue a choice of course determined by my family?". These are just some of the many questions that runs through a student's mind. The answers to these questions are ones that these students may not have at times and the problem is that when they make a wrong decision, it has a compounding effect not just on individuals but the nation as a whole.

In Malaysia, there are two (2) categories of higher education institutions. The first is government-funded public universities, polytechnics, community colleges and public colleges. The second is private higher educational institutions which are basically institutions not funded by the government and these include non-university status institutions such as private colleges, university status institutions such as private universities and university colleges and finally foreign university branch campuses such as Monash University Malaysia (Study Malaysia, 2015). Picking a university is one thing and picking a course is another. At the higher education phase, study opportunities in Malaysia include certificate, diploma, undergraduate, as well as postgraduate studies. Undergraduate studies consist of bachelor's degrees and professional qualifications while postgraduate studies offer master's degrees and PhDs. Generally, higher education at the diploma level is catered for school leavers with a secondary school certificate such as

SPM (age 17 onwards) whilst a bachelor's degree require post-secondary qualifications such as STPM, GCE A Levels or other equivalent pre-university qualifications (age 19 onwards) (Study Malaysia, 2015).

Presently, there are hundreds of available tertiary courses at a students' disposal. The options alone can be very overwhelming with new combinations of courses occurring every day. The days of choosing orthodox courses are long gone. These days there are cross breed courses such as financial engineering, engineering technology (energy and environmental), urban and regional business and finance studies and so much more. New courses are being introduced every day as we evolve to become a more advanced nation such as e-government studies, nanotechnology and even cloud computing. The possibilities are endless. "Archaeology of Human Origins" may appear to be tempting. However, if one waits too long to focus on your economics major, you may not get in all the requirements you need (Kolodner, 2017). This statement in itself is not the core issue as the main pinch of it all is that students have not chosen the best course designed for them intellectually.

Career preferences are basically a free opportunity to pursue a desired career. Nonetheless it is still a confusing satiation. In most cases, students rely on their friends and families. For instance, their parent's occupation has a great influence on them due to its exposure. With that, some may follow in the footsteps of their parents not knowing if that is something they want to pursue, passionate about and willing to put in the years to educate themselves to become successful in their chosen field. Parents may also become overly involved in career decisions because they want their children to be more content in a career than they are in their own jobs. Children may begin to identify and accept what parents say in order to please them not knowing where their strengths and weaknesses lie. Therefore, children take their parents' comments as absolute and neglect to challenge them or to assess their validity if it is suited for them. Thus, children are affected when they realize the challenges ahead of them midway through tertiary education (Lankard, 1995).

Existing Problems with Current Education System

On an annual basis, data shows that there are numerous university and college students that fail to complete their courses and graduate with the intended degree or diploma in hand. It is becoming more common for students to just try out the course first and make decisions later if they are into the course or not. It is not the correct mentality to waste valuable time by choosing a course just to try out and waste a couple of years in tertiary education.

Statistics shows in Malaysia currently there are almost 23% students are changing courses in the first 2 years into the higher educational institution. This is an alarming situation for several reasons and two of the important ones are the **fees spent** during these "self-discovery" period and **late entry into the work market**. Not to forget there are also a fraction of students that don't complete the course of choice after a couple of attempts to complete it. These two problems can be closely related to the fact that Malaysians nor Asians practice what is known as a "**gap year**" which is basically a preferred if not a

norm in the Western culture whereby high school leavers opt to take a year off from studies to travel and understand where their passion lies.

With that being said, it is crucial to **understand what academic capabilities a student has in order to make a sound decision on what varsity courses that best suits their skills**. Areas such as cognitive skills need to be understood by the student prior to making any decision. In this rapidly changing technologically advanced world we are living in today; it is **crucial to aid young high school leavers to identify their current estimated potential**.

Literature review

“Education is the passport to the future, for tomorrow belongs to those who prepare for it today” (Malcom X, n.d.).

A plethora of studies surrounding the topic of higher learning and education have been conducted in the past. The main literature used in this research paper centers around attrition rates in higher learning institutions due to poor course selection and a deep dive into the factors that influence students in deciding what academic field of study to pursue. As decision making is a key determinant in this research, this paper also looks at how individuals make decisions in general when it comes to their career path which begins with the choice of tertiary education.

Varsity Attrition Rate

The Malaysian society perceives tertiary education as something highly valuable because it is the pathway for great self-advancement. A degree alone is considered as a passport which gives prestige, career opportunities, comfort and lifelong security. Singh (1987) explained that higher education in Malaysia has been valued as an avenue for individual and group socioeconomic advancement and also serves as an apparatus to achieve national development objectives. Back in 2001, during the Third Outline Perspective Plan (OPP3), Tun Dr. Mahathir Mohamad and the government predicted that the demand for labor will be more focused towards high-technology and science-based industries such as chemical, biotechnology and other technologies which will require tertiary qualification. The expected jobs that can be created from the sophisticated production processes in the coming years will be approximately 469,000 engineering jobs (Economic Planning Unit, 2001).

However, despite this positive outlook in the job market, the attrition rates of students failing to complete their courses in higher learning institutions across Malaysia is still prevalent. This has resulted in severe wastage from both an academic and administrative perspective as well as an adverse social impact to the nation (Sangodiah et.al, 2015). Based on a study by Malaysian Talents Development of Talent Corporation Malaysia Berhad (Lajjun, 2012), it was found that from 168,000 students who pursued diploma and certificate programs, 18% of them which is approximately 30,000 failed to graduate. Additionally, out of 100,000 students who go on to their first-degree program, only 83,000 actually successfully finished their course of study while the remaining 17% dropped out. This means on average, at least 17.5% of total students who enrolled in

tertiary education dropped out in Malaysia as they were unable to cope with the intellectual demands of their course choice. Sangodiah et.al (2015) further reported that a private university experienced over 14% attrition rate in just 6 months! This was largely attributed to students who began studying for their first degree and did not make it beyond their first year. Again, wrong course choice, loss of interest and inability to cope with the high demands and expectations required in their course of study were some of the reasons behind this. On one hand, students who choose wisely are less likely to drop out of the institution before graduating (Vilarella & Hu, 1990).

The issue of attrition is a widespread phenomenon and not only a problem in Malaysia. For instance, in University of Tasmania, 42% of first year students left their course during the first year, with most of those (38%) of all first-year students dropping out of university altogether (Burke, 2016). The London Metropolitan University lost 220 students out of 1,130 which accounted for 20% who did not continue their studies into the second year. Bolton University also had a high drop-out rate at 17%, losing 130 of 755 full-time entrants.

In the United States (US), producing graduates in the science, technology, engineering and mathematics (STEM) fields have become a national priority. However, many STEM entrants end up leaving their studies by either switching to non-STEM courses or withdrawing altogether without earning a degree or certificate. Based on a report published in 2014 by the National Center for Education Statistics, the data showed that 69% of STEM degree students who enrolled between 2003 and 2009 left their course of study by spring 2009. Half of these students switched to non-STEM studies while the rest of them never returned to complete any tertiary qualification.

Similarly, the main reason for non-continuation was due the students' wrong course choice which led them to struggle to achieve satisfactory results (Weale, 2018). Due to the bad first experience in their tertiary education, many have a "fear" to return to university to earn a degree and simply opt to join the workforce instead. Studies have shown that college graduates with a bachelor's degree typically earn 66% more than those with only a high school diploma and are also far less likely to face unemployment (National Center for Education Statistics, 2014). This puts them at risk of not being able to improve their socioeconomic status and may struggle to have a sustainable career.

Consequently, the National Student Clearinghouse (NSC) in the US released its annual report on college completion rates. This report measures students who first entered college in the fall of 2011 and how many actually obtained a degree or certificate within 6 years. The NSC report tracks students' outcome regardless of where they obtain their degrees. It was reported that 45% of students earn a degree or certificate from their first higher learning institution within 6 years of commencing their studies. 12% however transfer courses to another university which gives a total completion rate of 57%. Another 12% however are still enrolled in college for the last 6 years and have yet to complete their original course of study and worryingly, 31% dropped out entirely as depicted in Figure 1 below.

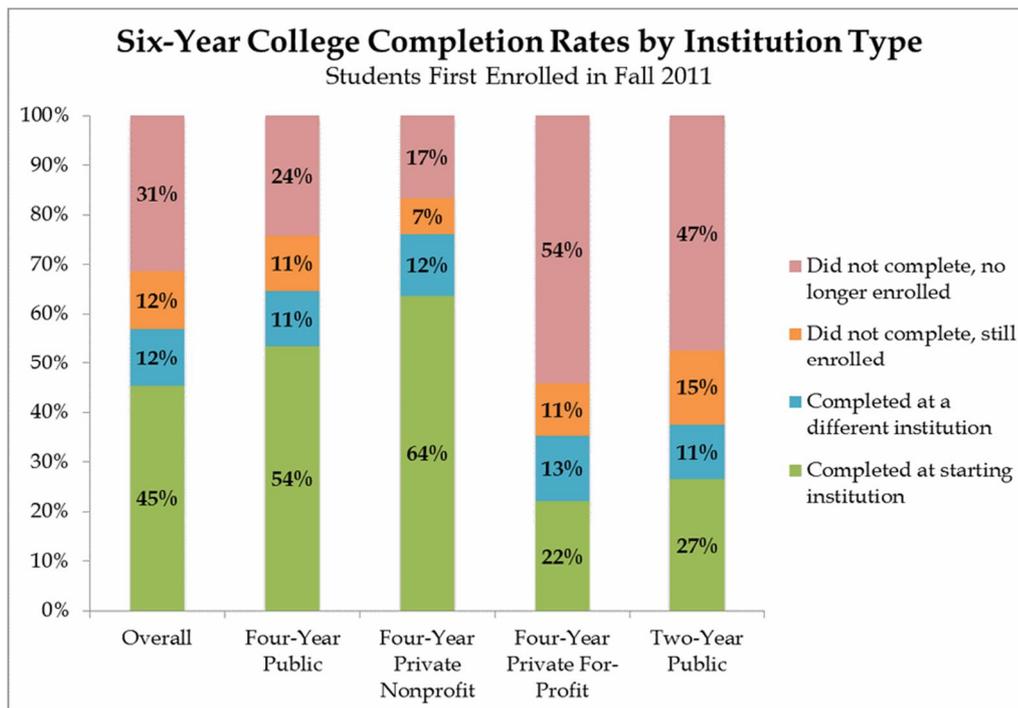


Figure 1. Source: National Student Clearinghouse. PRESTON COOPER/FORBES Cooper, P. (2017, December 19) College Completion Rates Are Still Disappointing. Retrieved from <https://www.forbes.com/sites/prestoncooper2/2017/12/19/college-completion-rates-are-still-disappointing/#2f9315db263a>

Based on the facts and figures presented above, one common theme that can be seen is that the problem of choosing the wrong course at the get-go and non-continuation is a worldwide problem amongst students. The **main concern** is that the **attrition** figures in **Malaysia** is almost **on par** as the **developed nations**. **Our nation** is considered to **still** be in the **growing** stages, and we are still playing catch-up with developed nations. Hence the need to ensure we can produce high quality graduates to build a competent workforce to meet the national agenda is crucial.

Prof Dr Yeah Kim Leng of Sunway University stated that a key **weakness** of the **Malaysian economy** is the **inadequate pool of scientists, engineers, researchers and technologists** among youths today. Without the right talent and utilizing resources effectively with minimum wastage, it will indeed take a long time for Malaysia to be a global leader as education is the main hope of a nation which undoubtedly lies in the education of its youth (Azhar, 2018).

Student's Decision Making

Selecting the right academic field to pursue is unquestionably an important life decision as it is basically determining the future of an individual. The decision-making process of students at the entry point to tertiary education have been the focal point of several studies. A quick and ill-thought-out major decision will lead to frustration. Premature decisions lead to loss of time if one switches courses mid-way through. This leads to loss of money due to the additional cost and extra time spent in college as well as the

loss of income while still in college to complete the preferred academic course before stepping into the working world, not discounting the additional time taken to get there (Gustavus, n.d.). The empirical studies surrounding decision making can be further categorized into 3 themes which is discussed in the sub-chapters below in pursuit for a better understanding on how these complex strings of factors and phenomenon come together when a person ends up making a choice in life let it be from the simplest to the most critical ones.

Complexities in Decision Making

Several studies conducted all share that there are complexities when it comes to decision making. Anh and Taylor (2003) indicated that previous research did not fully look into the complexities in transitioning from high school to higher learning institutions but focused more on looking at this as a simple binary choice problem. Bloomer and Hodkinson (1997) defined student decision-making as a complex nexus in which habitus, personal identity, life history, social and cultural contexts, and learning are inter-related.

Students are influenced by a variety of factors in which the importance of these factors varies among students (Payne, 2003). He further emphasized on pragmatic rational where these young minds tend to be constraint by a realistic perception of opportunities. There is mixed evidence when it comes to timing of decisions and specifies a number of factors which lead to the final decision such as attitudes towards education, ethnicity and family background. Similarly, Maxwell et al. (2000) noted that there is no one single factor considered in the decision-making process for varsity courses. There are always combinations of elements that will influence the final outcome.

Other studies carried out had some confounding aspects when it came to making decisions. Some students don't have the option to make a decision when they are not accepted by certain universities. This same notion applied for those who live in isolated areas (James, 2000). Davies (2003) agreed with James and pointed out that student's choices are bounded by other elements such as socioeconomic and cultural capital. Field of academic study is a leading factor in decision making. However, the decision on what academic studies to undertake itself are complex and depends on the subject area chosen. It was found that students tend to be more inclined towards the business major because the notion is that career prospects are better. Decisions made in favor of science or technology fields tend to be clouded by research opportunities (Brennan, 2000).

Decision Making Models

Based on past research, it is apparent that there is little unanimity when it comes to the process of decision-making. Some authors such as Krause et.al (2005) state that a rational decision is accompanied by some stable elements but other authors such as Payne (2003) disagreed with this view. Davies (2003) and Harren (1979) argued that career decision making models are more life-stage focused as decisions such as choosing the right varsity courses are likely to happen at a particular time in a life span. Several other authors; Brennan (2000); Janis and Mann (1977) agreed with this conception. Collectively, their research basically concluded that this model has 3 phases. The first is the **predisposition phase** which centers on family background, parental authority to higher education and

the level of self-belief. The second phase is called **exploration**. This is where students look for varsity courses to enroll in based on personal variables such as interest, career plans and access to information which may be subjective. The final phase is where the **choice to take up a varsity course is made**. This however depends on if the student is offered a place at their chosen university studying their preferred course choice and if costs and rewards are balanced.

Early Stages of Decision Making

Deciding what tertiary course to undertake is a major part in the career decision making process. Payne (2003) states that the first and most crucial decision is whether to continue studying or completely ruling it out. This decision is strongly influenced by predispositions and aspirations formed over a long period of time. Leach and Zepke (2015) conducted a study amongst Latino students and amazingly found that 41% of elementary students opted that tertiary education is a must while in middle school the number dropped to 18% but soared to 39% for high school students. In Japan, 9th grade students aged 14-15 must choose between general or vocational high schools. While the initial decision to continue studying may be made early, specific plans about varsity courses are usually made later (Payne, 2003). It also useful to note that Bloomer & Hodkinson's (1997) assert that early decision-making can be quite unstable. There are even views where the pressure to choose a varsity course places a huge strain on students at a young age and this can cause stress which can manifest into psychological backlash leading to depression and anxiety (Lee, 2009). Heppner et.al (1995) also agreed with this view stating that negative behaviors can be detrimental to a student's physical and psychological well-being.

In **Malaysia, students** tend to **decide** on their **college major post SPM results**. For those who are undecided, they tend to base their decision on other factors such as society pressures which will be discussed further in the next section. Some opt to visit career fairs in which they can explore the options available to them. However, Sia (2012) noted that in Malaysia, students **MUST** go straight to college or university not considering the fact that most higher learning institutions are privatized money-guzzling business entities and these students may make a wrong decision based on obscure facts. A new report also points a finger at college marketing strategies and how well course content and the demands of a program are explained to potential applicants (Donnelly, 2015).

Factors Influencing Students' Varsity Course Selection

Many of the existing theories developed in previous research have attempted to establish a universal theory that can apply to any individual when it comes to deciding what course of academic study to enroll in. Conversely, this is hard to achieve and illogical as these students come from various backgrounds coupled with different interests and what makes this even more challenging is that there is a vast array of academic courses to choose from and the list keeps growing (Karpova and Hodges, 2010).

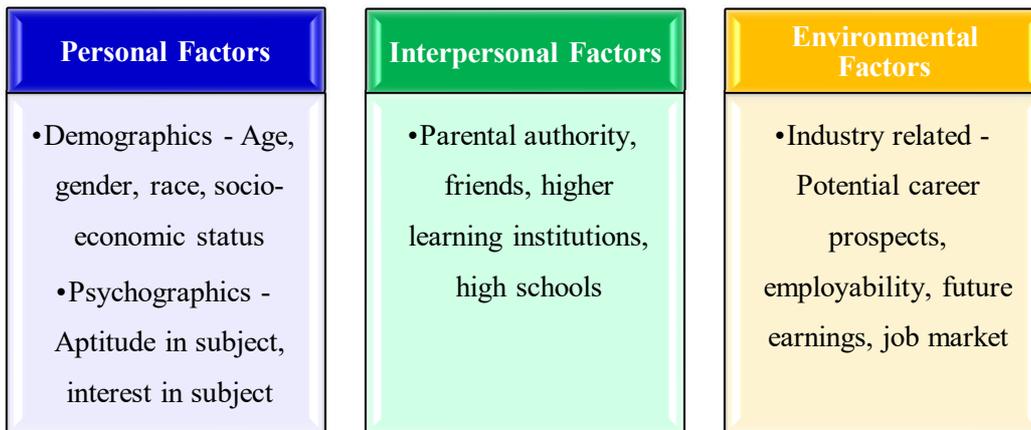


Figure 2. Three Major Influential Factors in Choosing Varsity Courses

As a result, based on the numerous research and studies conducted in the past surrounding the topic of selecting varsity courses, the researcher has honed-in **three major influential factors** contributing to decision making when it comes to varsity course selection. These three factors are (1) **Personal** factors, (2) **Interpersonal** factors and (3) **Environmental** factors. Each of the three categories of influence are depicted in Figure 2 below.

Personal Factors

Demographics: A considerable amount of studies has investigated demographics such as age, gender and most importantly, socio-economic status (SES) which is deemed to be a very motivating factor in choosing the “right” varsity course (Simpson, 2001 and Karpova & Hodges, 2010). Students that typically come from high status families are more inclined to pursue tertiary education to the highest level (James, 2000). James (1999) supported this notion stating that lower SES students were under-represented in higher education.

In Malaysia and in fact most Asian countries, the norm is for students to carry on their education in higher learning institutions in an attempt to build a career and make a good living. Take for example India, the majority of students tend to pursue medicine or engineering due to a particular pre-determined mindset about these professions as they are lucrative high-paying jobs considered to be “safer” and can increase their societal status (Sridhar, 2014). Finally, preferences may vary by gender, race or ethnicity.

Psychographics: In Karpova and Hodges (2010), they looked at work values defined as values that an individual perceives should be fulfilled from their participation in the work force such as job satisfaction. Porter and Umbach (2006) suggested that students are likely to succeed if they choose a varsity course that fits their personality traits, interests and beliefs. When these elements are aligned, the choice of course is considered compatible with the student.

In Malaysia, Teo (2009) looked at values, interests, and skills as determinants to examine career indecisions among students from the College of Business in Universiti Utara Malaysia. The results showed that the variables are negatively related to career indecisions and are perceived to be strong motivators. Similarly, Talib and Tan (2009) examined the same but using career development, academic achievement, and occupational information as determinants. The sample selected in the study were first-year undergraduate students from four public universities namely Universiti Sains Malaysia (USM), Universiti Malaysia Sabah (UMS), Universiti Malaysia Terengganu (UMT) and Universiti Putra Malaysia (UPM). Interestingly, the results showed that **students with high academic results** tend to be **more undecided** when it comes to their career and also feel the greater need for career information and self-knowledge.

Other researches within Asia proved that career uncertainties which are linked to choosing the right university major is a current and ongoing issue among students (Mansor & Mat Rashid, 2013). Sani (2017) also emphasized to **Malaysian** school leaver's that one should **have knowledge** about both **themselves** as well as **the working world**. Self-knowledge in the areas of interests, skills and personality are of paramount importance to make an informed career decision. Consequently, it is imperative for students to choose the right study programs that best fits their personalities as the chosen program is correlated to their future career paths (Misran et.al, 2012).

Interpersonal Factors

Parents' influence including parental dispositions, preferences, expectations and encouragement have compelling effects. Most children tend to make decisions on what course to enroll merely to please their parents as they know it is what their parents would want. Out of fear of disappointing them, students simply succumb to their parents' demands. (Sani, 2017). It is important to note that though students respect their advice, the decision lies within the student on what best suits their skills to avoid struggling in the long run (Afterschool.my, 2017). Chen and Liew (2015) suggests that the expectations and advice from parents are influencing factors in their child's decision on what tertiary education to pursue. Parental involvement may result in a 'push' or 'pull' effect and some research findings have shown negative effects as parents tend to choose a course that completely mismatches their child's personality. In a separate study by Latifah (2015), she concluded that a big difference is apparent when it comes to Asian parents as they have much higher educational expectations of their children's tertiary education compared to American parents. Malaysian parents too, have a have similar expectations. Latifah's research also suggested the need to have a guidance program for school leavers to help them find their footing in terms of determining what course of study to take by exploring career related competencies and occupational exploration.

Separately, it is a norm that students tend to base their decision on what course to enroll in by following their peers. Again, they may end up switching courses halfway, losing time and money. If they do in fact graduate, they may find themselves unable to secure a job as they don't have a passion for the field studied (Sani, 2017). It is **crucial** that students **understand** that the **decision** should be **based** on their **innate abilities** and have the **courage to pursue** what **field of study** that **fits** them best.

Karpova and Hodges (2010) also indicated that high school teachers are positive forms of interpersonal influence in the decision to select varsity courses. They are able to guide to students in helping them understand their strength and weaknesses thus giving them an indication of what their future could prove to be with their abilities.

Environmental Factors

Industry Related: Eidimtas and Juceviciene (2013) showed that students tend base their decision on what tertiary course to study based on existing job opportunities that are available. They do thorough research on what field is in demand. Past researches pointed out that this is a fatal mistake because students tend to forget that they will only obtain their tertiary qualification after a good 5 years or more in which a lot can change in the job market by then. The field that was in demand and was the main reason for their choice of study may no longer be attractive. As a result, it is important to look ahead on what jobs could potentially be in demand in 5 years and work backwards. Sani (2017) agrees with this view and emphasizes that school-leavers and aspiring undergraduates have to plan their future careers before deciding on the course that they want to pursue. Students pursue tertiary studies to secure a sustainable future and are more interested in monetary outcomes. Hence, being well-equipped with the work environment and skills needed is an important consideration. Singh (1989) also talks about how a student's social class changes if they major in distinguished courses as this will lead them to obtain professional career and be highly marketable.

Cebula and Lopes (1981) claimed that high starting salaries and employment opportunities were the two fundamental drivers for students that chose a business major in university. One interesting study by Culpepper (2006) revealed that extrinsic benefits such as monetary rewards and future job market prospects were more important than the selection of varsity courses as a personal fit for their skills. It was also noted that when students primarily relied on extrinsic benefits, they were unlikely to be satisfied with their choice of tertiary study. Contrarily, when students **put more focus** finding the **best tertiary course which suits their strengths and competence**, it resulted in a **higher degree of satisfaction**.

Relevance to Current Studies

From the thorough exploration of past studies, there is ample evidence to show that a structured framework is needed to help high school leavers make the best suited decision when it comes to the enrollment of tertiary education. A collaborative effort is crucial by high schools, higher learning institutions and families in helping these young adolescents shape a promising future.

Research methodology

The purpose of this research is to establish the factors that are significant in student's choice of varsity courses. It is important to note that there are some studies done previously which indicates that personal reasons are the most influential element for student's decisions. However, the viewpoint of this research paper takes into account the current socioeconomic status and how external factors in the globalized environment can

impact ones' decision especially when it comes to furthering studies in a tertiary educational institution.

Research Design

In order to better understand how students in Malaysia choose varsity courses, a quantitative research method will be used. The reason for choosing this approach is to gain a better insight of what factors influences a student's decision and the level of significance it plays in their final choice. The target population of this research are students aged between 17 to 20 years. These are students in their final year of schooling and those that have just enrolled into the early stages of tertiary education such as A-Levels and foundation. The sampling frame is limited to individuals and the sample size include 100 participants within the target population. A comprehensive research is conducted through probability sampling method in which the data collection method is through surveys using an online questionnaire. Furthermore, a structured assessment is proposed to help alleviate this dilemma faced by students which in turn can prevent a bigger national crisis when it comes to competent labor force which is of paramount importance in any developed nation.

Sampling Design

This research is intended to address a very niche group of participants; students ending their high school and in the beginning of their tertiary education. These group of people can vary from the age of 17 until 20 years old.

The targeted number of students for this research will encompass 50 participants. In this research Kelas Tuisi Cikgu Mariyam (KCM), a tuition center based in Klang Valley has agreed to avow the researcher to conduct the intended research on their students with their parents' consent. One important factor the researcher could leverage on KCM is the fact that they have a program for high school leavers to work part time in their premises and these part time employees ranges from Form 6 students, foundation or A-Level students and students simply waiting for SPM and STPM results. The latter group of participants falls within the intended research population in the sample size.

Participation for this research was voluntary, and all the participants both the students and part time employees were informed that their grades in class or work performance would not be impaired or positively impacted by their participation in this research. It is also prudent to take note that they were not remunerated in any way for their participation.

Data Collection Methodology

The main research method used is survey in the form of questionnaires. However, there are 2 main branches of surveys conducted for this research; (1) to gauge the students' academic potential and (2) to measure the factors that influence the students' decisions in determining the varsity courses they pursue. The surveys are also designed to gather information to address the research questions outlined in Chapter 1 of this document.

Addressing the qualitative approach, the data collection will also be done using interviews conducted with several participants. Questionnaire (1) which involves gauging

students' academic potential encompassing 20 questions which addresses emotional intelligence, decision making skills, English language, IQ and mathematics. Questionnaire (2) on the other hand will address factors that influences students' decision in choosing varsity courses. The latter includes a summation of 45 items measuring socioeconomic status, demographic sheet and items measuring the variables that influences the students to choose the certain varsity course. For a copy of the surveys please refer to Appendix A.

The participants were asked to rank when necessary by using a Likert rating scale from 1 – 5. The latter scale is kept small and the scores given are ranked for further analysis.

Analysis Methodology

Data collection for this research will be conducted during in the month of June – August 2019 (the second / third quarter of the year). This will be ideal at this stage of the research due to the cohort of participants which will be predominantly Form 5 students that have recently started **their** final schooling year, SPM and STPM leavers waiting on examination results.

The questionnaires will be administered to the participants through an online research tool namely Google Forms. Participants that signed up for this research will be given a specific timeslot to cater for the classes and work schedule. KCM has agreed to accommodate and granted 45 minutes in total for both the students and part time employees to participate in this research.

The research questionnaire will be focused around three (3) major influencing factors described in Chapter 2 of this document namely (1) Interpersonal Factors, (2) Personal Factors and (3) Environmental Factors.

For participants under 18 years of age, a consent letter is acquired from the parents and the questionnaires include a statement of consent that details the purpose of the research and an assurance that all gathered information would be kept confidential and anonymous.

Research Philosophy

This research can get strenuous and extensive very quickly if no focused areas are narrowed down from the very beginning. This research paper will serve as the tip of the iceberg in understanding the current educational issue we have in Malaysia. One fact that surfaced during the literature review (Chapter 2), there are no much data that can be retrieved from the education ministry on the attrition rate of students in university. Having said that, with this research we could potentially identify to a certain extend what the real issue is when it comes to choosing varsity courses and further expand the study for data gathering and further analysis in future.

Specific, Measurable, Attainable, Relevant and Timely (**SMART**) is the research philosophy embraced for this research document. As detailed in the previous paragraph, there are a lot of factors and areas that can be further studied for the betterment of the education in Malaysia nevertheless, the study will only focus on the main stream of **influencing factors in choosing varsity courses**.

Research findings

Demographic of Respondents

Total of **50** people **participated** in this research. Demographics of the participants are summarized on the diagrams and table below:

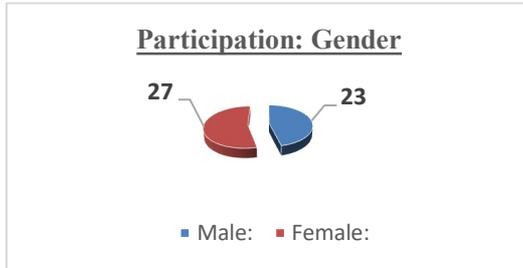


Chart 1. Participation based on gender

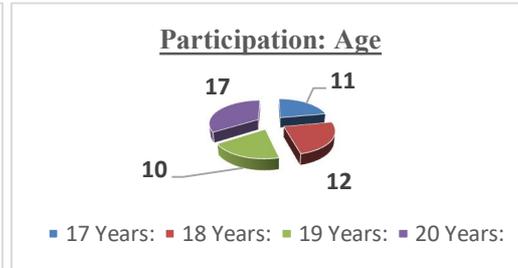


Chart 2. Participation based on age

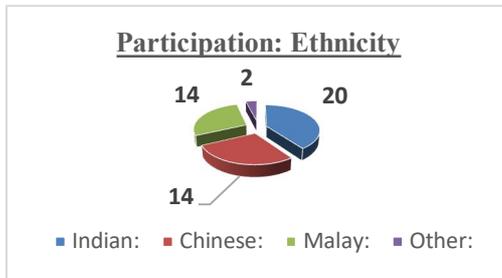


Chart 3. Participation based on ethnicity

Table 1. Summary of Participant's Demographics

Total 50 Respondents from KCM Tuition Centre in Bandar Tun Hussein Onn									
Gender		Age (Years Old)				Ethnicity			
Male	Female	17	18	19	20	Indian	Chinese	Malay	Others
23	27	11	12	10	17	20	14	14	2

Statistics & Analysis

A couple of statistical analysis approach is taken to ensure the data collected are viable and reflects a certain amount of competency. They are all as discussed in the upcoming sections.

Descriptive Statistics Analysis

For the data acquired for each influencing factor and the result is summarized in the table below. The figures used for this analysis are the summation of the scores given by participants for each factor. In this case it depicts the sum of scores for 15 questions in the survey for each factor:

Table 2. Descriptive Statistics for Influencing Factors

	Influencing Factors		
	Personal	Interpersonal	Environmental
Mean	52.600	45.460	48.940
Standard Error	1.505	1.390	1.403
Median	54.000	44.500	49.500
Mode	53.000	44.000	42.000
Standard Deviation	10.639	9.830	9.923
Sample Variance	113.184	96.621	98.466
Kurtosis	0.287	0.042	0.350
Skewness	-0.813	0.439	-0.267
Range	45.000	44.000	50.000
Minimum	24.000	26.000	21.000
Maximum	69.000	70.000	71.000
Sum	2630.000	2273.000	2447.000
Count	50.000	50.000	50.000

For Personal Factors, the mean value is 52.600 whilst the median shows 54.000. This results in a negatively skewed distribution with mean lower than median and skewness value at -0.813. The shape of this distribution is leptokurtic with a sharper peak as kurtosis value is more than zero, 0.287.

Looking into Interpersonal Factors, the mean value is 45.460 and the median reads 44.500 which indicates the distribution is positively skewed with the value of 0.439 (mean higher than median). Interpersonal factor also shares the leptokurtic distribution shape with a kurtosis value of 0.042 (value higher than zero).

The Environmental Factors carries a mean value of 48.940 whilst median of 49.500. The values indicate the result is negatively skewed distribution with median higher than mean value and the skewness value at -0.267. The shape of this distribution is leptokurtic with the sharpest peak compared to the other two factors with a kurtosis value of 0.350.

Reliability Test

Using Anova Two – Factor without Replication, the reliability of the data is calculated with the formula; $1 - (\text{error MS} / \text{rows MS}) = \text{Cronbach's Alpha}$. Whereby, Cronbach's Alpha higher than 0.8 is consider a highly reliable data.

Table 3. Anova two-factor without replication

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	807.2889	49	16.47528	10.35664	2.77E-68	1.359909
Columns	882.96	44	20.06727	12.61463	2.46E-78	1.380447
Error	3429.751	2156	1.590794			
Total	5120	2249				

The Cronbach's Alpha for the results above is **0.9034** which makes the data a **highly reliable data**.

Normality Test

The Normality test is done using SPSS software. The test is conducted for 2 separate variables which are participants' age group and which ethnicity they belong to. The results of the Normality test are shown in the tables below:

Table 4. SPSS Test for Normality - Age

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Personal	0.269	4	-	0.908	4	0.471
Interpersonal	0.318	4	-	0.860	4	0.261
Environmental	0.321	4	-	0.782	4	0.073

Table 5. SPSS Test for Normality - Ethnicity

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Personal	0.346	4	-	0.869	4	0.295
Interpersonal	0.349	4	-	0.864	4	0.276
Environmental	0.320	4	-	0.903	4	0.445

Both the tables above show the results of the normality test and indicates the data is normally distributed. This is based on the **Shapiro-Wilk significance test which shows a p-value >0.05**. This test is suitable as the sample size is smaller than 50 to access the numerical means of accessing normality.

Validity Test

Validity test is also conducted using SPSS. The test is run for all the 50 participants. All the 50 participants' data collected is **valid with a p value < 0.05 and Pearson Correlation Coefficient value of higher than 0.279**.

Results of Preliminary Data Analysis

From the summary of the participants' demographic above, it is prudent to keep in mind while analyzing the results presented below, there are some biasness especially the location the survey was conducted – only one tuition center which is located in Klang Valley. The results presented below are all converted into percentage based on the score given by the participants in the survey.

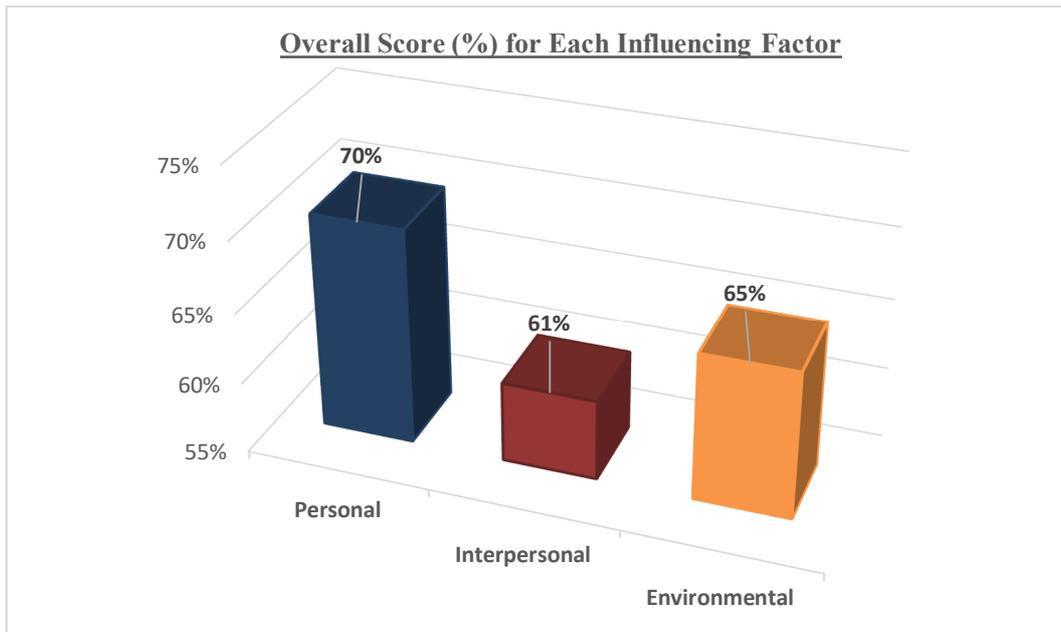


Chart 4. Summary of scores for each influencing factor

In summary, taking the results for all the participants (N=50), it is identified that the Personal Factors carries the highest score followed by Environmental Factors and Interpersonal Factors. The same trend is observed for all the variables analyzed in the following sections. However, it is important to keep in mind the factor's influencing magnitude may vary for each participant as depicted in the following chart.

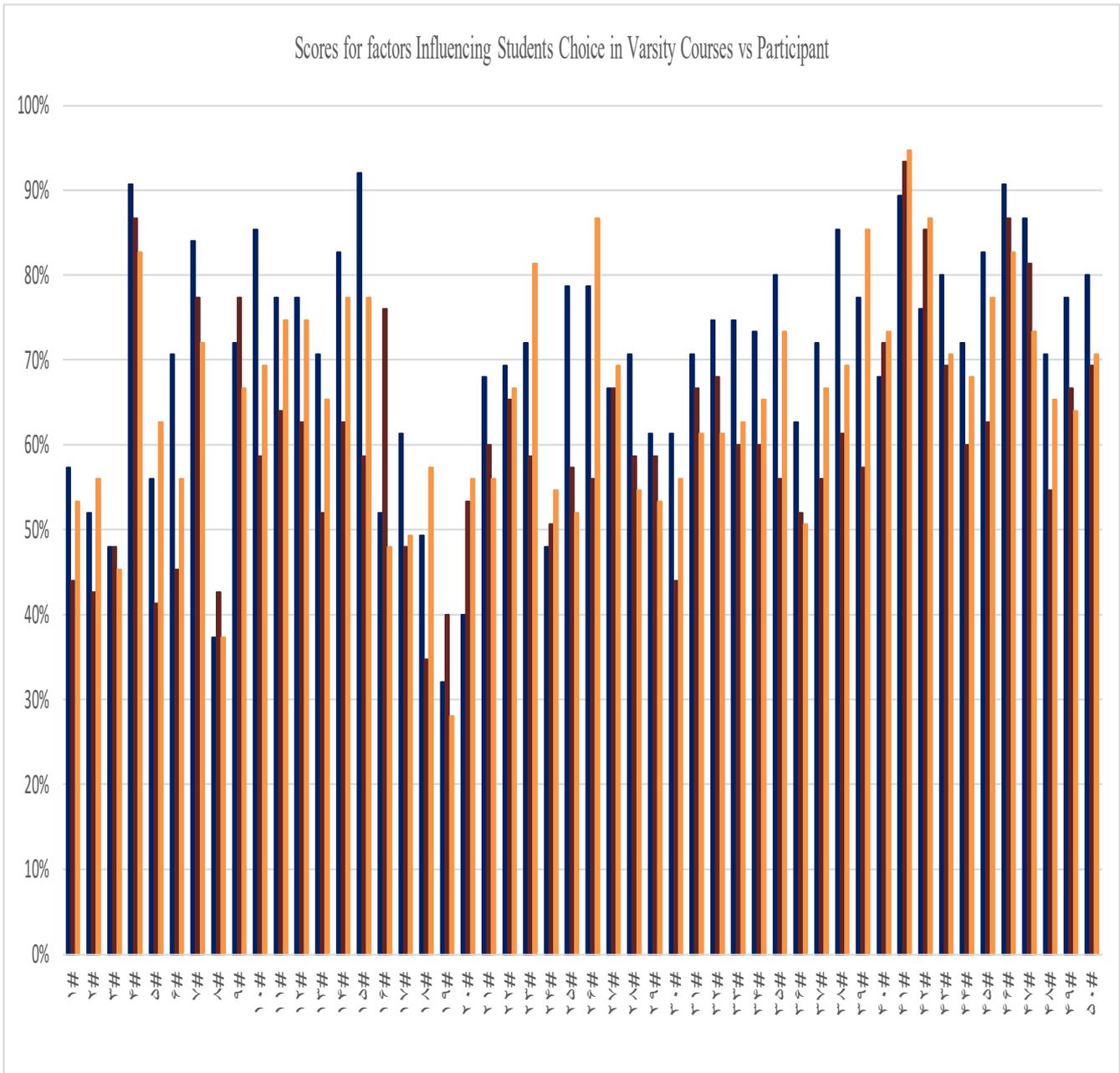


Chart 5. Summary of scores for influencing factors for each individual

Influencing Factors Based on Gender

The charts below show the results based on gender. In both the charts below, the results show that the Personal Factors scores the highest followed by Environmental Factors and Interpersonal Factors.

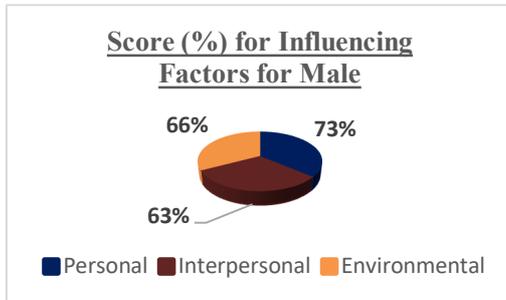


Chart 6. Influencing factors for male

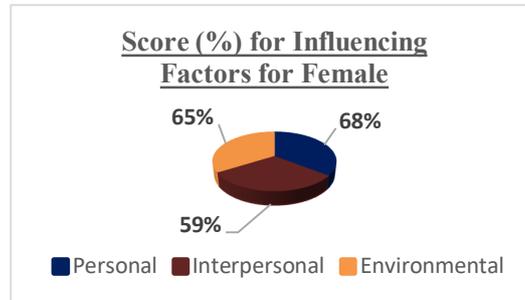


Chart 7. Influencing factors for female

Influencing Factors Based on Age

The charts below show the results based on age. In all four (4) of the charts below, the results show that the Personal Factors scores the highest followed by Environmental Factors and Interpersonal Factors.

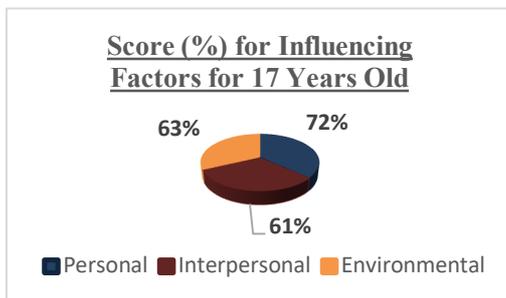


Chart 8. 17 years old factors

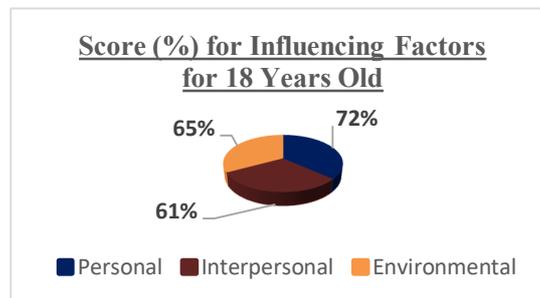


Chart 9. 18 years old factors

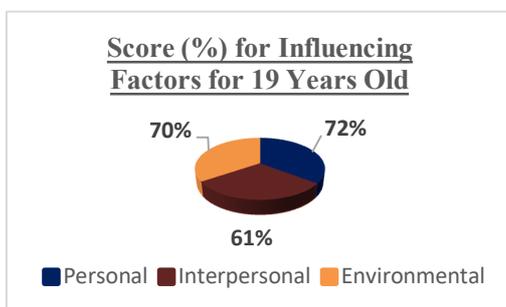


Chart 10. 19 years old factors

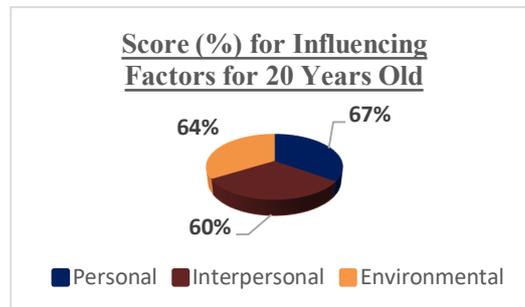


Chart 11. 20 years old factors

Influencing Factors Based on Ethnicity

The charts below show the results based on ethnicity. In all four (4) of the charts below, the results show that the Personal Factors scores the highest followed by Environmental Factors and Interpersonal Factors.

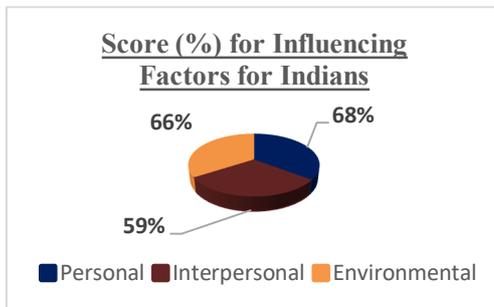


Chart 12. Indian ethnicity

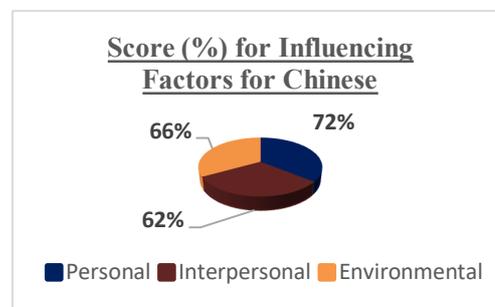


Chart 13. Chinese ethnicity

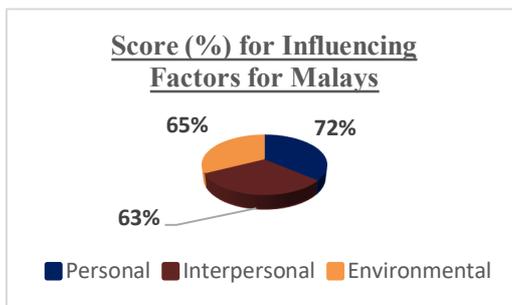


Chart 14. Malay ethnicity

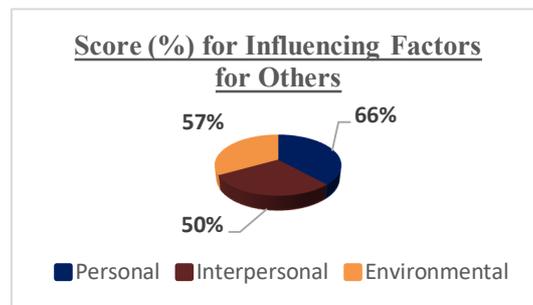


Chart 15. Other ethnicity

Results of Hypothesis Testing

In this research, the hypotheses of interests are:

- I. There is a direct and positive relationship between **personal** factors and student's **decision** in choosing varsity courses.
- II. There is a direct and positive relationship between **interpersonal** factors and student's **decision** in choosing varsity courses.
- III. There is a direct and positive relationship between **environmental** factors and student's **decision** in choosing varsity courses.

Upon analyzing the data gathered from the participants, all the **hypotheses above** are **accepted**. The independent variable for this research is the influencing factors that affects student's choices when it comes to varsity course selection (personal factors, interpersonal factors, & environmental factors). However, the results obtained can be leveraged to identify which factor has more dominance compared to the other.

The participants are allowed to score these factors using the Likert Scale with 5 being the highest score (highly influential) and 1 being the lowest score (highly not influential). These scores are then summed to get the score for each factor. In this survey there are 45 questions with 15 questions for each factor. Highest score a participant can give one factor is 75 and the lowest will be 15. These scores are then converted into percentage to identify which factor has the highest impact on each student. The conversion to percentage is based on the maximum one can score the factor and the calculation is based on the formulae below:

- $\% = (\text{Score} / 75) * 100 \rightarrow$ for one person
- $\% = (\text{Score} / 75) * 100 * X$
 - Whereby X is a variable which could be:
 - ✓ Number of people
 - ✓ Number of people in a certain gender
 - ✓ Number of people in a certain age group
 - ✓ Number of people in a certain ethnicity

Conclusion & recommendations

In this research, the three (3) main objectives were:

- I. **Explore** the factors that **influences** the decision making of a student when it comes to choosing varsity courses.
- II. **Investigate** how these **factors** can **impact** the students' decisions.
- III. Provide **recommendations** on how the cognitive behavior and academic excellence can be used to make a sound decision, setting the students for success in their varsity life.

The first two objectives were clearly addressed by extensive literature review which is presented in the beginning of this research paper and 3 influencing factors were identified (1) Personal Factors, (2) Interpersonal Factors, and (3) Environmental Factors. The findings from the research also exposed the dependency of students to these factors in decision making when it comes to courses in varsity.

Ensuring this research stays on course, the hypotheses has been converged to three (3) items:

- I. There is a direct and positive relationship between personal factors and student's decision in choosing varsity courses.
- II. There is a direct and positive relationship between interpersonal factors and student's decision in choosing varsity courses.

III. There is a direct and positive relationship between environmental factors and student's decision in choosing varsity courses

All 3 hypotheses above are proven to be valid based on the scores obtained from the survey conducted.

Overall Findings

The findings from the research and survey shows that all 3 factors play an important role in student's decision making when it comes to varsity course selection. However, the most prominent factor are Personal factors such age, gender, ethnicity, socio-economic status, and interest in the subject. The second most influential item are Environmental factors which are more related to potential career prospects, employability, future earnings, and job market. Interpersonal factors such as parental authority, friends, high schools, and universities comes in third.

We could clearly conclude the students are highly depended on the how they are brought up and the people they are exposed to which translates to their day to day activities when it comes to making decisions.

Although we have managed to score (how influential) the influencing factors using Likert's scale in the survey, the results show minimal differences between all the 3 factors (Personal: 2630; Interpersonal: 2273; Environmental: 2447). The latter further provides the research concrete evidence of student's decision-making phenomenon. It is also very obvious that the distribution and trend for the scores remain the same if we slice and dice the data into age, gender and ethnicity.

Besides investigating the influencing factors for decision making, this research also broadened the study to what is the actual academic potential of a student. The latter is a very important element to set a person up for success. Choosing courses which are beyond one's capacity is an error enforcing condition. The key findings show that 50% of participants who want to further their studies in Technical education could not excel in mathematical problems. This is a worrying issue, because this could lead into two outcomes, (1) Students opting to drop out of university and (2) Low quality graduates who barely make it through graduation.

Limitation of Study

This research has a couple of limitations which can also skew the data. The first limitation is the time allocation of the survey period. The survey was conducted over a period of one month using Google Forms. However, within this period, only 50 participants responded for the survey.

The latter brings us to the second limitation, the data set of only 50 (N=50). For a research like this a minimum of 300 participants are required. Hence with the small data set, the data obtained can be highly inclined to the demographics of the participants. The survey also must be conducted in various locations out of Klang Valley to get a true representation of people from different walks of life. It is also important to note that the

respondents are mostly females (N=27) and Indians (N=20). These can be one of the vital factors for data skewness.

As this was a quantitative study, it used a survey to collect data from the respondents. This type of data collection technique limited the nature of the responses given by the participants. The survey created for this study may not have addressed all factors due to the nature of respondents being from a specific geographical region. The latter will result in not being able to scale the study into a bigger scope addressing respondents varying from rural to major metropolitans.

Participants' seriousness in the survey is also a huge limitation. This survey is targeted for a young group (age 17 till 20) and some of the participants not being serious in answering the survey which causes bad data. The data collected itself might not be a strong representative of the actual reality because the respondents are basically those coming to the end of their high school life and those who have just enrolled in university, namely foundation or first year which provides sufficient wiggle room in the event if they have a change of mind. These students are attending both public and private universities. It is important to note that the financial capacity of various the respondents have a huge impact which will skew the result because achieving financial freedom is not their primary focus which translates to less proactiveness in entering labor force.

Another limitation for this research is it is only focused on the influencing factors for decision making but does not cover much on what is the right choice and how can this choice be made in a structured manner. One must understand that "want" does not necessarily mean "can". The latter reflects choices of varsity courses versus the academic potential of a student.

Despite these limitations, the information gathered is a steppingstone to further expand this case study and provide a more robust and structured recruitment guideline to major varsities that is present in Klang Valley. Capturing these varsities as a start nurtures an active network of database which can be shared within the Ministry of Education that could be further processed and implemented nationwide when it comes to directing students to the right course and setting them up for success in this competitive global environment.

Future Research Focus

While the results of this paper conclude the research hypotheses, it is important to address all the limitations discussed previously. It is important that students find a place in higher education that will put them in the best position for the future. The most important elements to be addressed will be the data set (number of participants) and locations of survey.

With a bigger and robust data set, this research can be further broadened to identify a systematic approach to make decisions when it comes to varsity courses. A tool can be developed which further provides a systematic solution for all its users to yield the best potential and make the best-informed decision when furthering their education.

Having such a tool, it will be a breather for both students and parents when it comes to making the important decision which will set the students up for success.

Conclusion

It is very evident that decision making is a complex process which involves multiple iterations and that it occurs for the simplest choices that we make in life. It is also proven that decision making skills progresses to be better as one get older and the fundamental of this phenomenon is living experience. The culture of a society, the environment of a neighbourhood and the political stability of a nation plays an important role in sculpting the though process of the netizen. Having said that, being in a structured education system from pre-school all the way to upper secondary, Malaysian are exposed to a certain environment and mind-set. The latter is heavily influenced by external factors such as personal, interpersonal and environmental which directly impacts the decision making of high school leavers with regards to what varsity course to pursue. Nelson Mandela once said that education is the most powerful weapon one can use to change the world. Education is the comprehensive learning and knowledge gained by an individual which typically passes on from one generation to another while career is serve as its application. The collaboration of the two play a fundamental role in improving an individual's competence and professionalism and will ultimately serve as their personal achievement. Hence the choices the young generation now will determine the future of the nation.

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