

Available online at www.sciencedirect.com**ScienceDirect**

Procedia - Social and Behavioral Sciences 102 (2013) 627 – 634

Procedia
Social and Behavioral Sciences

6th International Forum on Engineering Education (IFEE 2012)

The impact of SES among Malaysian matriculation students in selecting university and engineering program

Norbahiah Misran^{a,b,*}, Sarifah Nurhanum Syed Sahuri^{a,b}, Norhana Arsad^b, Hafizah Husain^{a,b}, W Mimi Diyana W Zaki^b

^aCentre of Engineering Education Research, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia.

^bDepartment of Electrical, Electronic and System Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia.

Abstract

This paper discusses the impact of socio-economic status (SES) among Malaysian matriculation students' on their decision in selecting university and engineering program they want to pursue. The research was conducted at two local matriculation colleges and 496 students were participated as respondents. Self-developed questionnaire has been distributed through the Counseling Unit of the matriculation centre. The data was collected and analyzed by descriptive and independent sample t-test. The findings showed that low SES students have stronger determination to pursue their studies at tertiary level compared to high SES students. However, both the low and high SES students showed similar trend of perception towards Universiti Kebangsaan Malaysia (UKM) reputation and its engineering program. There is no significant difference between these two groups in term of criteria in selecting their preference university and course program. Both groups chose the engineering program because of their personality and interest toward the field and information from the media report and the financial support.

© 2013 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](http://creativecommons.org/licenses/by-nc-nd/3.0/).

Selection and/or peer-review under responsibility of Professor Dr Mohd. Zaidi Omar, Associate Professor Dr Ruhizan Mohammad Yasin, Dr Roszilah Hamid, Dr Norgainy Mohd. Tawil, Associate Professor Dr Wan Kamal Mujani, Associate Professor Dr Effandi Zakaria.

Keywords: Socio-economic status; undergraduate students; university; engineering program;

* Corresponding author. Tel.: +6-038-921-6335; fax: +6-038-921-6146.

E-mail address: bahiah@eng.ukm.my

1. Introduction

Socio-economic status (SES) plays a big role and gives substantial impact to students in making their decision to enrol at Higher Educational Institution (HEI). SES is defined as graded hierarchy of social positions which can be used to describe a person's overall social position or standing. It can be indicated by a number of sub-concepts such as employment status, occupational status, educational achievement, income and wealth [1]. According to [2-5], SES is the strongest predictor in tertiary study. Three dimensions of SES were identified as parents' education, occupation and income [5].

Researchers reported that parents' education is an indicator of SES among adolescent in South Africa and Tanzania [6]. Commonly, parents that own knowledge about the tertiary education provide better access to information such as college for their children [7-8]. While parents' occupations reflect the SES through the type of occupations such as professional and non-professional. However, there are still a group of parents who are not working due to some reasons like health and economic factors but they possess knowledge and education. Vereecken, Maes and Bacquer [9] reported that parental occupation is able to affect the adolescent lifestyle including food habits and smoking. Parental income has a direct relationship with parental education and occupation. Depending on the level of parental education and type of parental occupation, parental income can be high or low. Parents or family with high or low income react differently to their children education especially when it comes to their beliefs and expectation towards their children. Davis-Kean [10] found that this matter indirectly affected the children academic achievement.

2. Literature Review

SES can also be categorised into high SES and low SES according to the position of parents' education, occupation and income. There are differences between high SES student and low SES student. The studies reported that high SES student intends to pursue tertiary education, attends university and pursues post graduate degrees [5,11-12]. However, low SES students take different direction. James, Baldwin and McInnis [13] stated that students from low SES were less presented in HEI. They are less confident and have many things to consider especially on the financial aspects in making decision to enter HEI. Both statuses also affect the student choice of course program in the college or university. High SES students prefer to study engineering and science. While, Davies and Guppy in Leppel [14] found that low SES students tend to choose subjects that can guarantee immediate job prospects upon graduation.

In Malaysia, there are many cases where children are at risk of not getting proper education because of the critical SES. The Ministry of Education reported that socioeconomic gap is one of the factors which influence student's dropout from school. This gap refers to the different health status, discipline quality, student's welfare and poverty [15]. According to [16], children at risk due to low SES do not perform well at school and have many social and cognitive problems compared to moderate and high SES students.

Hence, this SES factor is capable to give a long term effect in our education system. Therefore, there's an urged need to observe the SES issue among Malaysian matriculation students in their decision making to enter tertiary education level and study engineering program. There are three objectives for this study:

- To identify the high SES and low SES effects on Malaysian matriculation students' decision making in entering the HEI
- To identify the high SES student and low SES students' perception about the reputation of Universiti Kebangsaan Malaysia (UKM) and engineering programs at UKM.
- To distinguish the factors that influencing matriculation students' decision in choosing university and engineering program between high SES student and low SES students.

3. Methodology

3.1. Instrument

A questionnaire was developed by the researchers based on the past literature in choosing university and undergraduate program. It consists of four parts i.e PART A) respondent demographic, PART B) reputation of the university and engineering studies at UKM, PART C) student's interest towards engineering program at UKM and PART D) factor in choosing university and undergraduate program. Only analysis from PART A) PART B) and PART D) will be discussed in this paper. In technical aspect, the instrument is proved to have a very high level of reliability for all 36 items with a coefficient $\alpha = .890$ using Alpha Cronbach reliability analysis. The value of the α coefficient indicates that this instrument has high level of consistency and reliability in measuring the constructs.

The validity of the questionnaire is analysed using factor analysis by the Statistical Package for Social Science version 19.0 (SPSS 19.0). The results showed that the Bartlett's Test of Sphericity was 5614.082 at level of significant of 0.000, which means there is a significant correlation between the variables and the results of Measure of Sampling Adequacy with high value at 0.877. Using the Principal Component Analysis and Varimax factor rotation, eight factors with *eigenvalues* ≥ 1.0 was produced. Three of the factors are integrated factors and another five are single factors. Thus, this survey displayed a high validity of the constructs in measuring factors that influence students to choose university and programs.

3.2. Participant and procedure

A total of 496 matriculation students were recruited from Negeri Sembilan Matriculation College (KMNS) and Malacca Matriculation College (KMM) in 2011/2012 session for this survey. The questionnaires were distributed through the Counselling Unit of the colleges and a duration of 30 minutes was allocated for them to answer the questionnaire. Answers from each question are measured in five Likert scale where 1 indicates least influenced and 5 means strongly influenced. A positive response is considered when the answer is on a scale of 4 and 5.

3.3. Analysis

This study applied quantitative method using self-developed questionnaire to collect data. Hence, the researchers entered and analyzed all data using SPSS 19.0 software. Among the tests used to analyze the data were descriptive test and T-test. The analysis started with the demographic distribution of matriculation students, followed by the students' perceptions on the reputation of UKM and its engineering programs and the criteria of the university and undergraduate program.

3. Results and discussion

4.1. Demographic

Through descriptive analysis, the result of the respondents' demographic in Figure 1 showed that from 496 respondents, 177 of them are male students and 319 are female students with different background of ethnicity and SES. Majority of them are Malay (87.70%), followed by Chinese (8.47%), Indian (3.23%) and other ethnics (0.40%). The respondent's background of SES showed that 259 students were come from low SES, 212 students are from high SES and 25 students are unknown status. The unknown status represented the missing value in the

analysis. The students were categorised into high SES and low SES based on some criteria of parents’ education and occupation in Table 1.

Table 1. SES criteria

SES	Criteria
High	- Parents work in any sector
	- Parents hold any certificate, diploma and degree
Low	- Parents not work or has retired in any sector
	- Parents do not hold any certificate, diploma and degree

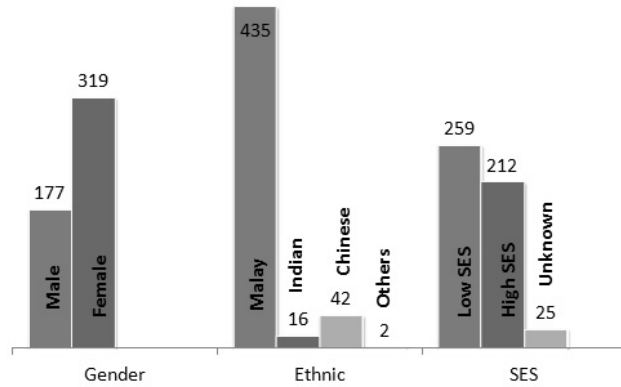


Fig.1. Student's demographic

Then, the matriculation student's decision in entering HEI and pursuing engineering program for each category has been analysis again through descriptive analysis. Figure 2 showed that only 47 students from high SES and 118 students from low SES have intentions to pursue engineering program at HEI. At the same time 71 students from high SES do not want to further their study in engineering compare to low SES students that only recorded 39 students.

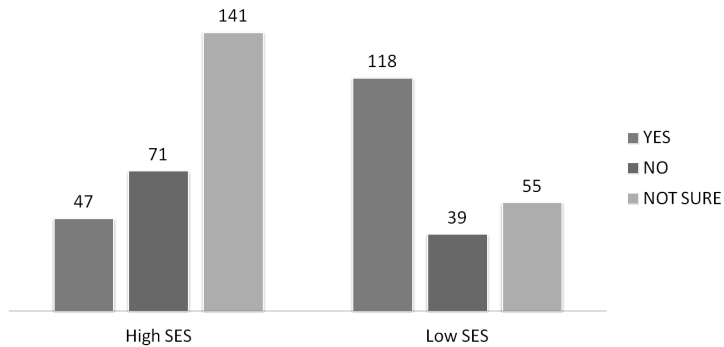


Fig. 2. Matriculation student's decision in pursuing engineering program at HEI

These findings showed low SES students are more interested and motivated in pursuing engineering course at HEI. Based on some literatures, this finding against James [13] which stated that high SES students prefer to

study engineering program. Some factors that may answer why majority of high SES students do not choose to study engineering program are their parent have strong financial capability to support their children to study other programs. They also have freedom to study what they like without restriction on financial issues.

Table 2. Students perception on UKM reputation and engineering program

PART B	SES	M	SD	Mean difference	t	p	df
Knowing the existence of UKM	High	4.60	0.75	-0.01	-0.11	0.85	479.00
	Low	4.61	0.76				
UKM as a prestigious university	High	4.13	0.81	-0.00	-0.06	0.76	478.00
	Low	4.13	0.81				
UKM research university status	High	3.96	0.96	-0.08	-0.99	0.11	474.00
	Low	4.05	0.87				
UKM's mission to uphold the Malay language	High	3.79	1.13	-0.04	-0.39	0.13	476.00
	Low	3.83	1.04				
UKM offers engineering programs	High	3.96	1.08	-0.08	-0.89	0.03	424.95
	Low	4.04	0.95				
UKM has quality engineering program	High	3.76	0.75	-0.02	-0.22	0.18	474.00
	Low	3.78	0.76				
UKM offers dual-degree program	High	3.22	0.81	0.00	0.01	0.52	474.00
	Low	3.22	0.81				
UKM engineering programs are more difficult	High	3.04	0.96	0.00	0.04	0.12	475.00
	Low	3.04	0.87				

The independent sample T-test has been used to analyse the students' perception on UKM reputation and engineering program. There are significant differences between high SES and low SES group if the value of p is less than 0.5. Table 2 showed only one item has significant difference between groups with the value of p is 0.03. Another seven items have a value of $p > 0.05$ which mean no significant different between groups. The item that showed a significant different between high SES and low SES students is their knowledge about engineering program offered by UKM with $t(424.95) = -0.89, p < 0.05$. Based on the mean (M) value, the low SES students seem to have more knowledge about engineering program at UKM compared to high SES student. Other items also show similar trend when the M value of low SES students are higher than high SES students even there are no significant difference. Then, the value of standard deviation (SD) is distributed between $0.00 < SD < 1.10$

showed that some respondents result deviated in a small number from the majority of other respondents score. In this part, student's perception depends on their knowledge and environment. It also depends on student's effort to find the information about the university and engineering program.

In choosing university and engineering program, both groups agreed with the suitability between their personality and interest, $t(477.00) = 0.24, p > 0.05$; the cost of study and financial support, $t(478.00) = 0.73, p > 0.05$ and the information they get from mass media, $t(478.00) = -0.38, p > 0.05$. The result in Table 3 also showed that there is no significant difference between both groups. Their career history is the factor that has a significant different between both SES groups but the M value for high SES students is $M = 3.30$ and low SES students is $M = 3.18$ showed both groups are not really agreed with this item. The other M values showed a close result between each groups except the financial factor. The M value of high SES students ($M = 4.08, SD = 2.23$) is higher than low SES students ($M = 3.97, SD = 1.08$). It indicated that majority of high SES students still concern about financial matter that relate to program fee and life expenses. While the SD values are scattered from the mean score showed not all high SES students have a problem with financial support. Most high SES and low SES student choose an internal factor compared to external factor that make the suitability between personality and interest still a relevance factor in this global education.

Table 3. Factors in choosing university and course program

Section A	SES	M	SD	Mean difference	t	P	df
The influence of parents, teachers and family members	High	3.88	1.09	0.04	0.44	0.51	477.00
	Low	3.85	1.08				
Follow friend's selections	High	2.78	1.08	0.07	0.70	0.10	478.00
	Low	2.70	1.17				
Suitability with personality and interest	High	4.16	0.88	0.01	0.14	0.74	477.00
	Low	4.15	0.96				
Information from media	High	3.84	0.88	-0.03	-0.38	0.35	478.00
	Low	3.87	0.95				
Career history	High	3.30	1.08	0.11	1.05	0.02	473.61
	Low	3.18	1.24				
The cost of study and financial support	High	4.08	2.23	0.11	0.73	0.48	478.00
	Low	3.97	1.08				

Hence, some recommendations can be outlined in order to reduce the education gap between the high SES students and the low SES students. Government, parents, teacher and counsellor should take more radical effort to ensure better future for these students. For instance, parents must work hard to improve their families SES so that it will minimize the effect of SES in their children's education. They have to work out on the three-dimensional factors that most influence the SES such as occupation, education level and income. Yet, these

sensitive issues are hardly discussed; they have to look into and decide their children future especially on academic matter.

In addition, teachers and counsellors have to work together to identify the lower SES students and offer them guidance to decide suitable university and program. It is found that in educational sociology, the school environment and staffs are capable to influence the student's development and achievement [17,18]. The government might also need to continue the education scheme for the lower SES students. Based on the Government Transformation Program (GTP) launched in 2008, education has become one of the main fields that will be focussed on by the government. Hence, the Ministry of Education is going to implement some proactive actions to ensure low SES students can access better education quality like other countries [19].

Conclusion

From the analysis, both groups of students gave significant observations especially in decision making to enter the HEI. The contradict result from both groups reflected that the low SES students had higher determination to pursue their study in engineering rather than high SES students. Regardless of high SES or low SES, the students have very general knowledge about UKM and its engineering courses offered in UKM, as well as factors that influence them in choosing university and its corresponding undergraduate program.

In conclusion, the research findings showed that significant results are inconsistent with the pass literatures. SES is not the only factor that influences Malaysian matriculation students in choosing university and undergraduate program. SES also can motivate or demotivate matriculation students to pursue engineering course at Higher Educational Institute. Hence, to compliment this quantitative research, a qualitative research has to be conducted to explore more about student's perception and clarify the result. However, these research findings are limited to the matriculation students in 2010/2011 session.

Acknowledgement

This research is fully sponsored by Universiti Kebangsaan Malaysia under research grant UKM-PTS-2012-100.

References

- [1] Graetz B. Perspectives on socioeconomic status in Ainley J, Graetz B, Long M. & Batten M. *Socioeconomic Status and School Education*. Canberra: Australian Government Publishing Service, 5-22; 1979.
- [2] Stage F & Hossler D. Differences in family influences on college attendance plans for male and female ninth graders. *Research in Higher Education* 1989; **30**: 301-315.
- [3] Choat D. *The myth of equal opportunity: Wealth of school district as a determinant of tertiary participation*. Wellington: Aotearoa Polytechnic Student Union & New Zealand University Student's Association;1998
- [4] Chalmers A. Maximising your marketing to senior secondary school students: Analysing student decision making and the implications for marketing strategies. *HR Conference on Marketing Education*. Central Hotel Auckland; 2001
- [5] Looker D. & Lowe GS. *Post secondary access and student financial aid in Canada: Current knowledge and research gaps*. doi://www.millenumscholarship.ca/en/foundation/publications/pareport/cpm-bkgnd.pdf , 2012.
- [6]] Aaro LE, Flisher AJ, Kaaya S, Onya H, Namisi FS, Wubs A. Parental education as an indicator of socioeconomic status: Improving quality of data by requiring consistency across measurement occasions. *Scandinavian Journal of Public Health* 2009;**37**:16–27
- [7] McDonough PM. *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press; 1997.

- [8] Choy SP, Horn LJ, Nuniez A, Chen X. *Transition to college: What helps at-risk students and students whose parents did not attend college?* In A. F. Cabrera, & S. M. La Nasa (Eds.), *Understanding the college choice of disadvantaged students*. New Directions for Institutional Research, 107. San Francisco: Jossey-Bass; 2000, p. 54-64.
- [9] Vereecken CA, Maes L, & Bacquer DD. The influence of parental occupation and the pupils' educational level on lifestyle behaviors among adolescents in Belgium. *Journal of Adolescent Health* 2004; **34**:330–338.
- [10] Davis K, P. E. The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology* 2005; **19**:294-304.
- [11] St John E. What really influence s minority attendance: Sequential analyses of the high school beyond sophomore cohort. *Research in Higher Education* 1991; **32**:141-157.
- [12] James R. *TAFE, University or work? The early preferences and choices of students in years 10, 11 and 12*. Leabrook, South Australia : NCVER; 2000.
- [13] James R, Baldwin G. & McInnis C. *Which university? The factors influencing the choice of perspective undergraduates*. Canberra:Department of Education. Training and Youth; 1999.
- [14] Leppel K, Williams ML, & Waldauer C. The impact of parental occupation and socioeconomic status on choice of college major. *Journal of Family and Economic Issues* 2001, **22**:373-394.
- [15] Ministry of Education.. Minimize the education gap. *Master plan for educational development 2006-2010*. doi: www.bppt.com.my/resources/download , 2007
- [16] Arshat Z, Baharudin R, Juhari R, Kahar R. Tingkahlaku keibubapaan dan penyesuaian tingkah laku anak dalam keluarga berisiko di luar bandar. *Pertanika Journal Social Science and Humanities* 2002; **10**:165-178
- [17] Heck RH. Examining the relationship between teacher quality as an organizational property of schools and students' achievement and growth rates. *Educational Administration Quarterly* 2007; **43**:399-432. doi : [://eaq.sagepub.com/content/43/4/399.full.pdf+html](http://eaq.sagepub.com/content/43/4/399.full.pdf+html) (February 14, 2012).
- [18] Ming TW & Holcombe R. Adolescents' perception of school environment, engagement, and academic achievement in middle school. *American Educational Research Journal* 2010; **47**:633-662. doi : [://aer.sagepub.com/content/47/3/633.full.pdf+html](http://aer.sagepub.com/content/47/3/633.full.pdf+html) (February 14, 2012).
- [19] Prime Minister Department. 2010. Chapter 8: Increasing student's achievement. *Government Transformation Program*. doi : [://klnportal.kln.gov.my/klnvideo/2010/transformasi/video/documents/Pelan%20Hala%20Tuju%20GTP/Pelan%20Hala%20Tuju%20GTP_Ba b08.pdf](http://klnportal.kln.gov.my/klnvideo/2010/transformasi/video/documents/Pelan%20Hala%20Tuju%20GTP/Pelan%20Hala%20Tuju%20GTP_Ba b08.pdf) (February 3, 2012)