

## GRADUATES' CHARACTERISTICS AND UNEMPLOYMENT: A STUDY AMONG MALAYSIAN GRADUATES

**Associate Professor Dr. Noor Azina Ismail**

Department of Applied Statistics

Faculty of Economics and Administration

University of Malaya

50603 Kuala Lumpur, Malaysia

E-mail: nazina@um.edu.my, Phone: +603 79673638

### Abstract

*The main objective of this paper is to investigate the effects of graduates' characteristics on the chance of being employed. A total of 3,025 Malaysian graduates involved in the study and data were analyzed using logistic regression analysis. The results show that the employment prospects of graduates with a good command of English and who possess leadership and technical skills are better when compared to those without these skills. These findings suggest that steps should be taken to improve soft skills among graduates. The results also show that Indian and female graduates in this study were found to have less chance of being employed compared to the Malay and Chinese graduates. However, these findings should be interpreted with caution as some of the respondents were not randomly selected, thus suggesting further research towards identifying the relevant factors is required.*

**Keywords:** Unemployment, graduates, logistic regression, mismatch, leadership and technical skills, education

### 1. INTRODUCTION

Malaysia's economy had been growing at an annual rate of 6.6% for the past three decades; yet unemployment rates have increased from 2.6% in 1996 to 3.6% in 2003 (Department of Statistics, Malaysia, 1996–2003). Young graduates, in particular, experience difficulties in securing their first job and a high proportion of graduates hold a job that does not correspond to their education and expectations. In the last 20 years, the expansion of higher education has created a high number of graduates in a variety of disciplines. The expansion includes a number of public as well as private institutions. Public universities have grown from seven public universities in the 1990s to a total of 20 in 2007 (Ministry of Higher Education, 2007). A total of 18 private universities have also been established during the same period. At the same time, there are more than 500 other institutions, including university colleges, branch campuses of local and overseas institutions, open universities and other institutions with non-university status. Student enrolment had sky-rocketed. In 2002, the total number of students enrolled in higher institutions was 576,439 and enrolment had increased to 748,797 in 2007.

With the expansion of higher education, greater attention has to be paid to the labor market prospects since imbalances may be created between higher education and labor market demands (Kartz-Gerro & Yaish, 2003; Teichler, 2000). Specifically, there have been concerns about the level of graduate unemployment, the transition from higher education to work and the problems of job mismatches (Kougioumoutzaki & Kalamatianou, 2008). Although the unemployment rate in Malaysia is always low compared to the United States or European countries, there are great concerns for unemployment. This is due to the fact that currently, there is no unemployment insurance or assistance available in the country. Hence an increase in the unemployment rate may lead to an increased crime rate. In light of the above, this paper focuses on issues concerning unemployment and the association between graduates' characteristics and the chance of being employed in Malaysia, given the economic situation, changes in economic structure and changes in education growth.

### 2. UNEMPLOYMENT: ISSUES IN MALAYSIA

According to the definition of the Malaysia Labor Force Survey, the unemployed include persons who were available for work but did not work during a reference period. They could either be actively looking for work or not during the said period. The Malaysian economy did experience a significant unemployment rate in the mid-1980s as the unemployment rate exceeded 7% in 1986 and 1987 (Figure 1). This shows evidence of some mismatch problems during this period when the economy was adjusting from the transition of a reliance on mining and agriculture to manufacturing.

The increase of the unemployment rate during this period was a short-term adverse affect as the country consistently achieved more than 7% gross domestic product (GDP) growth with low inflation in the 1980s and 1990s, and a steady decrease of the unemployment rate from 1988 to 1997. However, since 1998, the rates of unemployment have been on the rise again although the increase was not as high as in the mid-1980s. Malaysia experienced several years of rapid growth in the 1990s which began to slow down at the end of the decade and it registered its lowest growth rate in 2001. During the period between 2002 and 2005, the average GDP growth was 5.74%. However, the changing of the economic structure may cause a rise in unemployment. For many years, manufacturing had been the strongest sector in the country and the main contributor towards employment creation until the financial crisis in mid-1997. From this period onwards, the agriculture sector was being progressively replaced by the manufacturing and services sector. The services sector, in particular, required people who possess the right soft skills such as communication and interpersonal skills but acquiring graduates with those qualities has been quite difficult. First of all, graduates may only be trained in the right technical knowledge and not in soft skills. Secondly, since the official language of Malaysia is Bahasa Malaysia and the teaching of almost all subjects in primary and secondary schools, and public universities are not in English, local graduates may find it very difficult to communicate in this language when they go out into the 'real' world.

It is very unfortunate because English is commonly used for communication in business, privately and even some government departments in Malaysia nowadays. Furthermore, it is a worldwide phenomena where working environments require people to be more flexible, where more emphasis is placed on 'soft' factors and 'generic' competencies such as communication skills and personality features (Spenser & Spenser, 1993) rather than solely on traditional human capital variables such as grade point averages and work experience. Various definitions of personality exist in the literature (Pervin, 1990). However, personality measures that are frequently used in studies of relationships between personality features and work characteristics are called the Big Five or the Five-Factor Model (FMM) personality construct (Tett et al., 1991). The components are defined as: Factor I, Surgency (or extraversion); Factor II, Agreeableness (or Interpersonal Sensitivity); Factor III, Conscientiousness (or Prudence); Factor IV, Emotional Stability (or Adjustment); and Factor V, Openness to Experience (or Inquisitiveness) (John, 1990). It defined the bright-side of personality (Hogan & Hogan, 2001) and it is used to predict job performance. In the economic literature, it is believed that good management enhances organizational performance.

However, there is very little consensus regarding the characteristics of good managers (Hogan, 2007). There is also research related to bad managers and each of the studies carried out under this topic provided lists of behaviors associated with bad management (see for example Bentz, 1985; Furnham & Taylor, 2004; Kaiser & Kaplan, 2006). After reviewing these studies, Hogan & Warrenfelz (2003) proposed that all existing leadership competency models can be organized as follows: (1) Interpersonal skills: self-awareness and self-control, emotional maturity, integrity. (2) Interpersonal skills: social skill, empathy, and relationship development. (3) Business skills: ability to plan, organize, monitor, and use resources. (4) Leadership skills: ability to influence, build and maintain a team, role modeling. Other personality constructs are 'locus of control' (Boone et al., 1996), 'type A behaviour' (Tett et al., 1991), 'sensation seeking' (Van den Berg, 1992 in Semeijn et al., 2005) and 'self-monitoring' (Kilduff & Krackhardt, 1994). Recently, Semeijn et al. (2005) used all four specific constructs and found significant personality effects on labor market entry, which were independent from the effects of traditional human capital variables. Locally, Roziyah et al. (2009) found that managerial competencies-related factors are one of the four factors that have predictive potential on a manager's career success. Other factors are individual-related factors, organizational-related factors and the person-environment fit factor.

The participation of women in the Malaysian labor force is still considered low although it has substantially increased over the years. Figure 2 shows that the rates of unemployment of graduates is on the rise and more rapidly for female graduates than their male counterparts since the early 1990s. This is an interesting phenomenon since the percentage of female students studying in higher institutions was much higher than male counterparts during this period (Ministry of Higher Education, 2008). The substantial growth of the proportion of female students and unemployment among female graduates are not only faced in Asia and the Middle East (Malhotra & DeGraff, 1997; Mehra & Gammage, 1999; Khuri-Tubbeh, 1995) but in many Western countries as well (Kougioumoutzaki & Kalamatianou, 2008). Furthermore, women are more likely to graduate from fields of study that do not offer highly technical skills needed by the new economy such as education, arts, humanities, social science and law (Teichler, 2000). These fields of study are considered to have lower labor market prospects. In general, graduates in science and technology seem to have fewer problems in getting a job compared to those in humanities and social science (Kougioumoutzaki & Kalamatianou, 2008).

This is supported by other researchers such as Allen (1998) and Drewes (2002) who believe that social science graduates may initially be disadvantaged by the lack of technical content and inability to relate to their programs of study and occupations although they do as well as graduates of applied courses of study once established. As far as Malaysia is concerned, it is important to mention that ethnic group is also a key factor that determines businesses, education policy, social policy, cultural policy, entry to educational institutions and others and thus serves as an important variable to be included in this study. Racial and ethnic composition variables were also found to be the single most important factor in explaining the observed correlation patterns in a study carried out in the United States (Conley & Topa, 2002). Other studies (Saarela & Finnäs, 2002; Blackaby et al., 1998; Blackaby et al., 2002) found that population groups who experience relatively low unemployment rates may also have relatively high wages and disability retirement propensity. In Malaysia, the place of origin can also play a vital role in determining unemployment among graduates. This is due to the fact that some graduates choose to return to their hometown to search for a job. Unfortunately, job opportunities in small cities are lower when compared to larger cities in Malaysia. In the literature, much has been said with regards to rural poverty and unemployment as well as migration from rural to urban areas (see for example, Parthasarathy & Anand, 1995).

### **3. METHODOLOGY**

#### **3.1 Data Collection**

This study was carried out in early 2005 and involved graduates of both public and private institutions in Malaysia from 2001 to 2004. A list of graduates was obtained from selected institutions. However, only nine institutions responded, of which five are public universities. A total of 23,996 graduates were produced during this period and this study chose to interview around 3,025 graduates due to limited time and costs involved. These graduates are from both public and private institutions. The most challenging task in carrying out this survey was to locate the graduates especially those who are already employed. This was due to the fact that some universities did not keep track of their graduates at the time the study was carried out and therefore do not have their current addresses. The alumni associations were also just formed in some of the institutions. The researchers had to depend on the addresses given during the study and most of these addresses are the graduates' family addresses. Since then some of the graduates had relocated and others were not available at the given addresses when the study was carried out. The problem was more pertinent for the employed graduates as they had moved to their place of work.

#### **3.2 Study Variables**

The status of employment in this study was determined by the response from the graduates, that is, whether they were looking for jobs or not at the time of interview. Those who were with jobs that were not according to their qualification and were looking for another job were considered as unemployed. This study also included grade point average, one of the traditional human capital variables in the analysis. More specifically, the final cumulative grade point average (CGPA) obtained by the graduates at the end of their study was used. It ranged from zero to four. Work experience was not captured in the survey and hence was not able to be included in the study. Ethnicity is represented by three major groups in Malaysia: Malay, Chinese and Indian. Responses of other racial groups (other than these three major groups) were discarded due to the small number of respondents. On the other hand, competencies in English language were represented by the grades obtained for English language at the *Sijil Pelajaran Malaysia* (SPM) level, which is equivalent to 'GSCE'. The actual grades ranged from one to nine, with one representing the highest grade. However, for the purpose of easy interpretation, the order of the grades was reversed with one representing the lowest grade and nine the highest.

Since the respondents in this study are not randomized according to the field of study, some of the categories have a very small number of respondents and hence respondents are classified into areas of studies namely science and social science. There were a total of 34 items used in measuring personalities and competencies using graduates' perspective on themselves. Each item had a five point scale, also known as a Likert scale, where one indicated very weak and five represented very strong. Items are then re-grouped using factor analyses. Other variables included in the analysis are dichotomous variables such as gender (male or female), place of origin of the students (urban or rural) and whether students had undergone industrial training during their study period (yes or no).

#### **3.3 Analytical Approach**

The analysis began in this study by summarizing and reducing the information on graduates' personalities and competencies using two separate factor analyses.

All factors that have eigenvalues greater than one (Green & Salkind, 2003) are retained. Since the sample size is quite large, items with factor loadings greater and equal to 0.3 were included. Next, the multiple logistic regression of employment on all of the variables and the personality scores were considered.

#### **4. RESULTS AND DISCUSSIONS**

Table 1 shows that personality and competency items can be categorized into four factors. None of the items were removed since all of the factor loadings are greater than 0.3. Factor 1 (Intrapersonal skills) and Factor 2 (Interpersonal skills) accounted for 30.20% and 22.38% of the variance of the items presented in the first two sections of Table 1. In total, the two factors accounted for 52.58% of the variable variance. Meanwhile, Factor 3 (Leadership skills) and Factor 4 (Leadership and technical skills) accounted for 48.70% of the total variance. Out of the 3,025 graduates who responded to this study, more than 80% of them were unemployed. Of the sample respondents, most of them were female, originated from a rural area, did undergo industrial or practical training and studied in the area of arts and social science (Table 2). Table 2 also shows that more females were unemployed compared to their male counterparts. The percentages of total unemployed graduates were also higher among those from rural areas, who did not have industrial training and studied arts and social science. The highest percentage of respondents in this survey was the Malays. This was followed by the Chinese and Indians. The percentages of Malay unemployed graduates were similar to those of the Chinese graduates, whereas the percentage of Indian graduates was slightly higher than the other two ethnic groups.

On average, graduates obtained a CGPA of approximately 3.0 with moderate variation (standard deviation = 0.39) (Table 3). The mean CGPA of unemployed graduates was slightly lower than those obtained by the employed graduates. In contrast, the employed graduates had higher English proficiencies compared to unemployed graduates. All of the variables were included in the multivariate model. The result of the final model is shown in Table 4. Out of 11 variables tested, only five variables showed significant effects on the probability of a graduate being employed. The chance of being employed is lower if the graduate is a female or originated from a rural area. Indian graduates are also less likely to be employed compared to their Malay and Chinese counterparts. The English proficiency at SPM level played a role in determining whether a graduate obtained employment or not. The results showed that the chance of being employed rose with an increase in English proficiency. The only significant personality variable is leadership and technical skills and this variable consisted of constructs such as possessing analytical thinking, being intelligent, independent, having leadership skills, communication and computer skills and possessing work experience. The non-significant variables were academic achievement (CGPA), industrial training, area of study, intrapersonal, interpersonal and leadership skills.

#### **5. CONCLUSION**

This study showed that having good grades did not guarantee employment for Malaysian graduates. The graduates must have a good command of English and other soft skills such as analytical thinking, intelligence, independence, leadership, communication and computer skills and work experience. One of the steps taken by the Malaysian government in enhancing the quality of tertiary education was through the implementation of the assessment of soft skills in public universities. Most public universities had taken steps to improve students' competencies such as making co-curriculum activities and activities in colleges compulsory: presentations in classes, incorporating more application in teaching, encouraging problem-based learning and systematically organized industrial training and many other activities. However, results of these actions are yet to be seen. Steps should also be taken to improve English proficiency and competencies even at earlier stages in the lives of young persons. Most of these challenges are more pronounced for graduates who originate from rural areas because they are less exposed to speaking in English and almost all of them study in the public universities where Bahasa Malaysia is used as the medium of instructions.

Gender is another factor that affects graduate unemployment. In general, it is found that male graduates have more chance of employment than females. This finding is consistent with that mentioned in the previous section and a study carried out by local researchers (Osman & Yusoff). However, this scenario is different for non-graduates. The rates of unemployment of females with secondary education decreased particularly from the early 1990s (Figure 2). This may suggest that females with a lower education level are more likely to be employed. Females with this type of education will be only be working in lower or middle management such as clerical staff, laborers and operators. These jobs do not require any leadership qualities. Further study should be carried out to identify factors related to graduate unemployment among females which is beyond the scope of this paper. Several aspects such as attitude and low ability in securing jobs among female graduates should be investigated.

In the meantime, employer's perception against female employees is also likely to have some role in shaping the trends of unemployment among female graduates. Women are perceived as sensitive, passive and less suitable to management responsibilities than men. Females graduate may also face higher competition in the job market due to the rapid increase in the proportion of females studying in higher institutions. A small proportion of females stopped looking for jobs after marriage due to family responsibilities and some chose to further their studies. The study also found that Indian graduates have less opportunity of being employed compared to the Malay and Chinese graduates. Caution should be taken when interpreting this result as graduates for this study were not randomly selected and hence this may create bias in the results. Using the data from the Labor Force Survey, Shafii et al. (2009) found that the employment percentage for ethnic groups in Malaysia can be considered as fair. In fact, they found that income distribution, which is measured by Gini coefficients, was similar among the three ethnic groups.

Looking back at the data, we found that there was very little variation in CGPA between employed and unemployed graduates. This explains why the overall academic performance did not affect the chance of becoming employed graduates. It was also surprising to find out that industrial or practical training was not significant especially as more than 60% of the graduates went through this kind of training. However, at the point when this study was carried out, industrial training was not really well implemented especially for non-professional courses and the main aim for the training was to expose students to the working environment and it was not designed to give opportunities for job seeking. Having good intrapersonal, interpersonal and certain leadership skills do not affect employment opportunities for Malaysian graduates in this study.

One of the steps to reduce graduates unemployment is by promoting a conducive environment for the development of entrepreneurship among graduates, hence less graduates will be looking for paid employment. The Malaysian government has attempted to do this through the country's development policies, namely the National Development Policy (NDP) 1991 – 2000, the National Vision Policy (NVP) 2001 – 2005 and the National Mission Policy (NMP) 2006 – 2020 but the effects of these policies are yet to be seen. Furthermore, graduates' perceptions towards entrepreneurship have to be corrected as some consider themselves unemployed even though they are involved in entrepreneurship activities. Lastly, it is recommended that future studies be carried out to investigate whether or not these results will hold true for all academic disciplines.

### ***Acknowledgement***

This article was based on research commissioned and funded by the Ministry of Women and Family and Community Development, Malaysia. Special thanks are due to Professor Dr Fatimah Daud, for her encouragement, support and particularly in giving me access to a lot of valuable information on personality skills and the data used in this study as well as her sound advice. My grateful thanks also go to Ms Wan Rafyah Wan Muhd Zin and Mr Ab Azid Che Ibrahim for their kind assistance in numerous ways.

### ***References***

- Allen, R. C. (1998). The employability of university graduates in the humanities, social sciences, and education: recent statistical evidence. Discussion Paper No.: 98 – 15. [Online] Available: <http://web.arts.ubc.ca/econ> (January 19, 2011)
- Bentz, V. J. (1985). A view from the top: A thirty-year perspective on research devoted to discovery, description, and prediction of executive behavior. In F. R. Wickert & D. E. McFarland (Eds.), *Measuring executive effectiveness* (pp. 147 – 206). New York: Appleton-Century-Crofts.
- Blackaby, D. H., Leslie, D. G., Murphy, P. D., & O'Leary, N.C. (1998). The ethnic wage gap and employment differentials in the 1990s: Evidence for Britain. *Economics Letters*, 58, 97 – 103.
- Blackaby, D. H., Leslie, D. G., Murphy, P. D., & O'Leary, N. C. (2002). White/ethnic minority earnings and employment differentials in Britain: Evidence from LFS. *Oxford Economic Papers*, 54, 270 – 297.
- Boone, C., De Brabander, B., & van Wittleoostuijn, A. (1996). CEO locus of control and small firm performance: An integrative framework and empirical test. *Journal of Management Studies*, 33, 667 – 699.
- Conley, T. G., & Topa, G. (2002). Socio-economic distance and spatial patterns in unemployment. *Journal of Applied Economics*, 17(4): 303 – 327.
- Department of Statistics, Malaysia (1996). *Labour force survey report*. Malaysia: Putrajaya.
- Department of Statistics, Malaysia (2003). *Labour force survey report*. Malaysia: Putrajaya.

- Drewes, T. (2002). Value added: humanities and social sciences degrees. Evidence supports long-term employment success. *Viewpoint*. Ontario Confederation of University Faculty Associations Forum, spring: 10 – 12.
- Furnham, A., & Taylor, J. (2004). *The dark side of behaviour at work: Understanding and avoiding employees leaving, thieving, and deceiving*. Basingstoke: Palgrave MacMillan.
- Green, S. B., & Salkind, N. J. (2003). *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data* (3<sup>rd</sup> ed.). New Jersey: Prentice Hall.
- Hogan, R., & Hogan, J. (2001). Assessing leadership: A view of the dark side. *International Journal of Selection and Assessment*, 9, 40 – 51.
- Hogan, R., & Warrenfeltz, R. (2003). Educating the modern manager. *Academy of Management Learning and Education*, 2, 74 – 84.
- Hogan, R. (2007). *Personality and fate of organizations*. Hillsdale, NJ: Erlbaum.
- John, O. P. (1990). The “Big-Five” factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality theory and research* (pp. 66 – 100). New York: Guilford.
- Kaiser, R. B., & Kaplan, R. E. (2006). The deeper work of executive development. *Academy of Management Learning and Education*, 5, 463 – 483.
- Katz-Gerro, T., & Yaish, M. (2002). Higher education: is more, better? Gender differences in labour market returns to tertiary education in Israel. *Oxford Review of Education*, 29(4), 571 – 592.
- Khuri-Tubbeh, T. (1995). Liberation, privatization and women’s employment in Jordan. Seminar on Economic Liberalization and Women’s Employment in the Middle East, Nicosia, Cyprus.
- Kilduff, M., & Krackhardt, D. (1994). Bringing the individual back in: A structural analysis of the internal market for reputation in organizations. *Academy of Management Journal*, 37, 87 – 108.
- Kougioumoutzaki F., & Kalamatianou, A. G. (2008). Employment status and occupational mismatch: The case of Greek social sciences graduates. Paper presented at the 2<sup>nd</sup> International Conference on Educational Economics, Athens, Greece, 27 – 30 August 2008.
- Malhotra A., & DeGraff, D. (1997). Entry versus success in the labor force: Young women’s employment in Sri Lanka. *World Development*, 25(3), 379 – 394.
- Mehra, R., & Gammage, S. (1999). Trends, countertrends, and gaps in women’s employment. *World Development*, 27(3), 533 – 550.
- Ministry of Higher Education (2007). List of IPTA and IPTS in Malaysia. [Online] Available [http://www.mohe.gov.my/webkpt\\_v2/maklumat.info\\_kpt\\_senarai.php?m=3&navcode=NAV004&subcode=SUB001&lang=ENG](http://www.mohe.gov.my/webkpt_v2/maklumat.info_kpt_senarai.php?m=3&navcode=NAV004&subcode=SUB001&lang=ENG) (June 6, 2007).
- Ministry of Higher Education (2008). Perangkaan Pengajian Tinggi Malaysia. [Online] Available: [http://www.mohe.gov.my/web\\_statistik/Buku\\_Perangkaan\\_2008.pdf](http://www.mohe.gov.my/web_statistik/Buku_Perangkaan_2008.pdf) (June 6, 2007).
- Osman, Z., & Yussof, I. (2008). Male-female education gap and return: Malaysia’s recent evidence. Paper presented at the 2<sup>nd</sup> International Conference on Educational Economics, Athens, Greece, 27 – 30 August 2008.
- Parthasarathy, G., & Anand, J. (1995). Employment and unemployment in Andhra Pradesh: Trends and dimensions. *Economic and Political Weekly*, 30(15), 811 – 821.
- Pervin, L. A. (1990). *Personality: Theory and research* (5<sup>th</sup> ed.). London: John Wiley and Sons.
- Roziyah Mohd Rasdi, Maimunah Ismail, Jegak Uli, & Sidek Mohd Noah (2009). Towards developing a theoretical framework for measuring public sector managers' career success. *Journal of European Industrial Training*, 33(3): 232 – 254.
- Saarela, J., & Finnäs, F. (2002). Ethnicity and unemployment in Finland. *Ethnic Study Review*, 25, 26 – 37.
- Semeijn, J., Boone, C., van der Velden, R., & van Witteloostuijn, A. (2005). Graduates’ personality characteristics and labor market entry an empirical study among Dutch economics graduates. *Economic Education Review*, 24, 67 – 83.
- Shafii, Z., Abiddin, N. Z., Ahmad, A. R. (2009). Ethnic heterogeneity in the Malaysian economy: A special reference to the ethnic group participation in financial planning activities. *The Journal of International Social Research and Practice*, 2(8), 394 – 401.
- Spenser, L. M., Spenser, S. M. (1993). *Competence at work: Models for superior performance*. New York: John Wiley and Sons.
- Teichler, U. (2000). Graduate employment and work in selected European countries. *European Journal of Education*, 35(2), 141 – 156.
- Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Pers. Psych.* 44: 703 – 742.

**Table 1: Results of factor analysis of graduates' personalities.**

Personality /Competency	Items	Factor Loadings	Eigenvalues	% variance explained
<b>Personality</b>	<b>Factor 1 (Intrapersonal Skills)</b>		8.54	30.20
	Honest and sincere	0.793		
	Emphasis on good values	0.731		
	Trustworthy	0.713		
	Obedient	0.695		
	Diligent	0.669		
	Able to give and take	0.663		
	Disciplined	0.592		
	Mature	0.538		
	Able to negotiate	0.533		
	Capable	0.516		
	Determined	0.512		
	<b>Factor 2 (Interpersonal Skills)</b>		1.33	22.38
	Confident	0.743		
	Motivated	0.712		
	Creative	0.689		
	Possess initiative	0.596		
	Able to influence other people	0.473		
	Able to adapt emotionally to a new situation	0.408		
<b>Competency</b>	<b>Factor 3 (Leadership Skills)</b>		8.21	26.26
	Responsible	0.820		
	Dedicated	0.750		
	Diplomatic	0.707		
	Easy to adapt to work environment	0.627		
	Able to focus	0.570		
	Committed	0.557		
	Ready to be taught	0.548		
	Able to work in group	0.502		
	Mobile	0.479		
	Able to organize/manage	0.485		
	<b>Factor 4 (Leadership and Technical Skills)</b>		1.090	22.44
	Possess analytical thinking	0.729		
	Intelligent	0.622		
	Independent	0.580		
	Leadership	0.555		
	Communication skills	0.537		
	Computer skills	0.449		
	Possess work experience	0.349		

**Table 2: Description of categorical scale of graduates' socio-demographic characteristics**

Variable Name	Description	Category	Total (%)	Unemployed (%)	Employed (%)
GENDER	Gender of Respondent	0 = Female	65.6	84.0	16.0
		1 = Male	34.4	78.7	21.3
ETHNIC	Ethnic group of Respondents	1 = Malay*	56.7	56.6	57.0
		2 = Chinese	28.2	27.7	30.6
		3 = Indian	15.1	15.7	12.4
ORIGIN	Place of Origin	0 = Rural	73.2	83.9	16.1
		1 = Urban	26.8	77.3	22.7
IT	Industrial Training	0 = No	39.8	83.6	16.4
		1 = Yes	60.2	81.1	18.9
AREA	Area of Study	0 = Arts and Social Science	54.0	82.6	17.4
		1 = Science	46.0	81.7	18.3

\*Reference group

**Table 3: Description of continuous scale of graduates' academic characteristics**

Variable Name	Description	Minimum	Maximum	Mean	Std. Deviation
<b>All Respondents</b>					
CGPA	Cumulative Point Average at the end of study	1.60	4.00	2.95	0.39
BI	English Proficiency at SPM level*	1.00	9.00	4.75	2.13
INTRA	Intrapersonal Skills	2.45	5.00	4.07	0.45
INTER	Interpersonal Skills	2.17	5.00	3.84	0.47
LEAD	Leadership Skills	1.00	5.00	4.04	0.47
LNT	Leadership and Technical Skills	1.71	5.00	3.76	0.46
<b>Employed</b>					
CGPA	Cumulative Point Average at the end of study	2.00	3.94	2.96	0.37
BI	English Proficiency at SPM level*	1.00	9.00	5.13	2.18
INTRA	Intrapersonal Skills	2.91	5.00	4.13	0.43
INTER	Interpersonal Skills	2.50	5.00	3.91	0.45
LEAD	Leadership Skills	2.00	5.00	4.11	0.45
LNT	Leadership and Technical Skills	2.00	5.00	3.91	0.43
<b>Unemployed</b>					
CGPA	Cumulative Point Average at the end of study	1.60	4.00	2.95	0.39
BI*	English Proficiency at SPM level*	1.00	9.00	4.67	2.12
INTRA	Intrapersonal Skills	2.45	5.00	4.06	0.46
INTER	Interpersonal Skills	2.17	5.00	3.82	0.47
LEAD	Leadership Skills	1.00	5.00	4.02	0.47
LNT	Leadership and Technical Skills	1.71	5.00	3.73	0.46

\*1 = lowest grade, 9 = highest grade

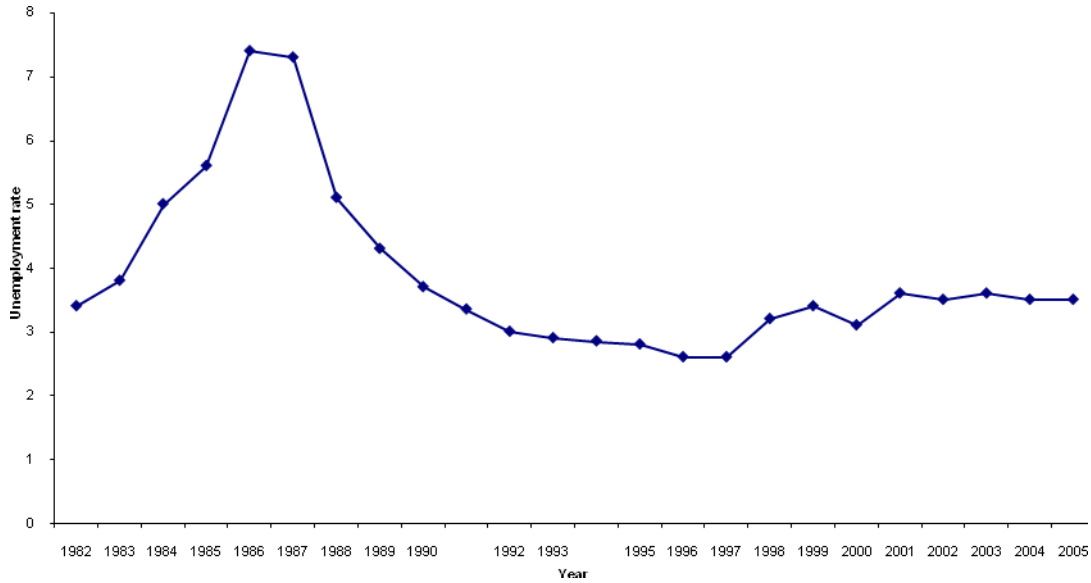
**Table 4: Results of fitting a multivariable model containing all covariates**

Independent Variables	Coefficient	Std Error	Wald	p-value	Odds ratio
GENDER	0.412	0.130	9.995	0.002	1.509
ETHNIC			9.472	0.009	
ETHNIC(1)	-0.006	0.138	0.002	0.966	0.994
ETHNIC(2)	-0.611	0.203	9.034	0.003	0.543
ORIGIN	0.414	0.134	9.519	0.002	1.513
IT	-0.121	0.134	0.820	0.365	0.886
AREA	-0.195	0.128	2.309	0.129	0.823
CGPA	0.179	0.161	1.229	0.268	1.196
BI	0.107	0.031	12.000	0.001	1.113
INTRA	0.132	0.094	1.977	0.160	1.141
INTER	0.114	0.098	1.358	0.244	1.121
LEAD	-0.065	0.102	0.413	0.520	1.067
LNT	0.273	0.097	8.016	0.005	1.314
Constant	-2.448	0.516	22.490	<0.001	0.086

-2 log likelihood = 1722.118

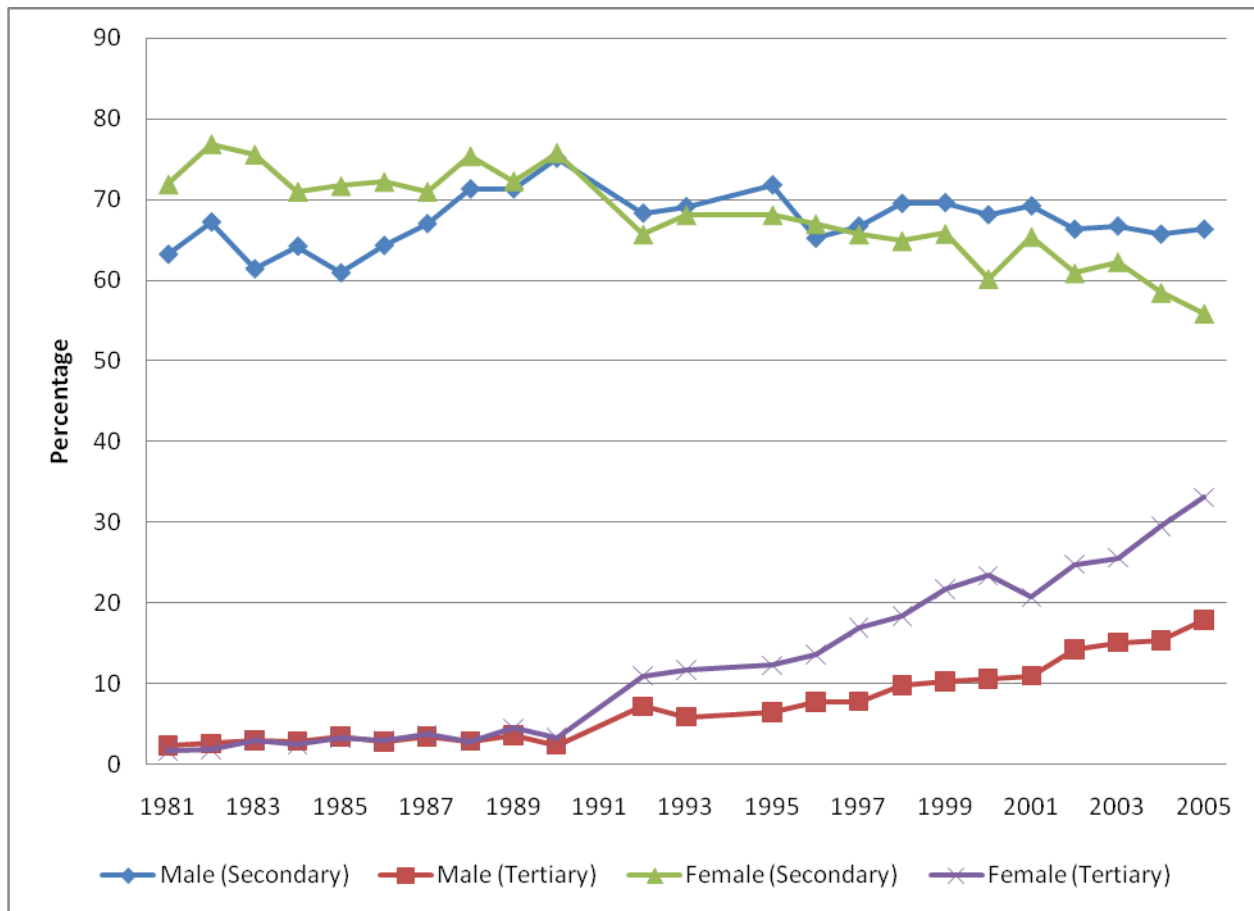


Figure 1: Unemployment Rates (%), 1982–2005



Source: Malaysia Economic Statistics – Time Series 2003, Labor Force Survey Report 2005

Figure 2: Unemployed Persons by Education and Gender (1982–2005)



Source: Labor Force Survey Report 1982–2005