



# Happiness and Unemployment: The Case of Malaysian Graduates

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## ABSTRACT

The objective of this paper is to study the determinants of graduates' happiness during their transition from university to labour market, with the focus on the effect of their employment status. Results of descriptive statistics reveal that there is a decreasing trend of happiness over the duration of unemployment. In particular, the happiness level drops from 'happy' to 'unhappy' after 90 days of being unemployed. Estimated Ordered Logit model shows that there is a negative psychological impact of unemployment. This negative impact is intensified after 180 days of being unemployed. Specifically, compared to those unemployed, those employed with full-time employment that commensurate with qualification are found to be happier. Other significant determinants of graduates' life happiness are financial difficulties, religions, types of degree and age.

**Keywords:** Life happiness, Malaysian graduates, psychological impact of unemployment

## Introduction

Since the 1990s, studies on happiness have been one of the focuses of many economic analysis despite some disagreements on the validity, reliability and comparability issues of the rather subjective happiness measurement tools. Ng (1997) has pointed out two importances of happiness studies. First, happiness is the ultimate objective for most people, if not all. Second, the key economic variables such as consumption are not always linked with happiness positively and linearly. In literature, various determinants of happiness have been identified. For instance, it is found that income, employment status, age, and marital status are significant determinants (Clark & Oswald, 1994; Winkelmann & Winkelmann, 1998; Easterlin, 2001; Blanchflower & Oswald, 2004). In particular, being unemployed is found to have negative impact on one's happiness.

This highlights the cost of unemployment can be much larger due to non-pecuniary cost, in addition to pecuniary cost. The impact of unemployment is even much larger than some life-change events like divorce or marital separation (Clark & Oswald, 1994), and having bad health (Winkelmann & Winkelmann, 1998). Winkelmann and Winkelmann (1998) decomposed the cost of unemployment into pecuniary cost (decrease in household income) and non-pecuniary cost (reduce in wellbeing), and they found that the non-pecuniary cost is larger than the pecuniary cost. Frey and Stutzer (2002) classified happiness determinants into five categories: personality factors, socio-demographic factors, economics factors, contextual and situational factors, and institutional factors. In the list of economics factors, employment status is one of the happiness determinants.

The negative psychological impact of unemployment is clearly established in the sample of working adults in various countries. The questions that follow are: What is the psychological impact of unemployment for a fresh graduate who is in transition from university to the labor market? What is the psychological impact of unemployment if it is compared to other employment status, such as self-employed? Does getting employed, regardless the quality of employment, will improvement the life happiness of a graduate? What is the influence of actual and self-expected unemployment duration in graduates' life happiness? These are the research questions that the present study attempts to examine.

It is possible that different employment status, at more disaggregates level, have different psychological impact. For instance, for those who are economically inactive (those withdraw from the labour force due to the disappointment or discourage worker effect), the psychological impact can be larger than being unemployed. Thus, psychological impact of unemployment should be

evaluated based on disaggregate employment status such as unemployed, economically inactive, part-time employment, self-employment, full-time employment that commensurate or not commensurate with qualification. Therefore, if an evaluation that is singly based on binary aggregation of "unemployed" and "employed," the outcome might subject to a aggregation bias (Edin, 1989; Lim, 2003).

Most graduates know that they are going to enter the state of unemployment upon graduation. They have different expectations on the unemployment state (such as the duration of the unemployment) that they are going to experience. Given two graduates with similar unemployment duration of 8 months, if the first and second graduate expects his unemployment duration is 2 and 7 months respectively, the negative psychological impact of unemployment should be higher for the first graduate than the second, *ceteris paribus*. Besides, dynamics adjustment of the expectation and adaptation to the unemployment can be an important consideration as well. Thus, expectation may play an important role in determining psychological impact of unemployment. In short, observing an individual's heterogeneities which include expectations and the use of more disaggregate employment status, are important considerations in estimating the psychological impact of unemployment.

There are two hypotheses that are related to the psychological impact of unemployment (Winefield, 1997). First: the hypothesis of exposure states that - unemployment will cause low psychological well-being. Second: the hypothesis of selection states that - low psychological well-being will cause unemployment, due to the fact that those with low psychological well-being are less likely to get a job. Thus, to avoid ambiguity in drawing causality relationship between unemployment and life happiness, longitudinal data (or panel data) is preferable than cross section data.

This paper consists of four sections. First, a brief literature review on happiness is presented. The second section shall present the data and methodology. Analysis and finding are discussed on the third and fourth section. Final section concludes the findings of this paper.

## Data and Methodology

### Data

The panel data of the present study consists of 240 respondents from two surveys. The data collection of the first survey was implemented from July 2005 to March 2006, targeted on the final year students of Universiti Utara Malaysia (UUM) and Universiti Tunku Abdul Rahman (UTAR). Data from a total of 430 respondents (304 from UUM and 126 from UTAR) was collected. This represented a response rate of 11.83% and 30.36% for UUM and UTAR respectively. Targeting on these 430 respondents, another survey was implemented from November 2006 to February 2007. The second survey successfully obtained 240 returned questionnaire.

### Methodology

Following the latent variable framework of Blanchflower and Oswald (2004), assuming that for each graduate there is a latent variable that represents his or her underlying happiness. This latent variable is associated with individual characteristics of the graduates measured at first survey ( $X_i$ ) or second survey ( $Z_i$ ). Let  $Y^*$  represent this latent variable and assume that  $Y^*$  is a linear function of  $X_i$  and  $Z_i$ , thus,

$$Y_i^* = \beta X_i + u_i \quad (1)$$

where

$Y_i^*$  = underlying change in happiness (unobservable)

$X$  = independent variables (first and second survey).

Given the ordered and discrete nature of the dependent variable and under the assumption that the error terms independently follow a logistic distribution, a standard ordered logit model results. The probabilities of being in each state ( $P_{ij}$ ) are a function not only of  $x_i$  but also six boundary parameters,  $\mu$ , where  $j=1,2,\dots,6$ . The maximum likelihood parameter estimates (MLE) are obtained by maximizing the following log likelihood function:

$$LF(\beta, \mu) = \sum_{i=1}^n \sum_{j=1}^J z_{ij} \ln(P_{ij}) \quad (2)$$

With respect to  $\beta$  and  $\mu$ , where  $z_{ij}$  is an indicator variable equal to unity if graduate  $i$  obtains value of change in happiness of  $j$  and zero otherwise. The model will be estimated with the robust variance estimates (Huber/White/sandwich estimator of variance).

## Results and Analysis I: Descriptive Statistics

Table 1 presents employment outcomes and mean of happiness. It is found that there are a substantial percentage of unemployed graduates (25%); more than forty percent (40.63%) are in full-time employment that commensurate with their qualification (FT1). Nearly a third (28.13%) of the graduates however, are in full-time employment that do not commensurate with their qualification (FT2). Only less than five percent (4.38%) of the graduates are in part-time employment (SEPT). In terms of mean of life happiness, Table 1 illustrates that unemployed graduates have the lowest value (3.96) whereas employed graduates with FT1 has the highest value (5.10). This implies that unemployment is positively associated with lower level of life happiness.

Table 1: Employment Outcomes and Happiness

	Percentage	Mean happiness
Unemployed	25.00	3.96
Full-time employment commensurate with qualification (FT1)	40.63	5.10
Full-time employment not commensurate with qualification (FT2)	28.13	4.29
<u>Self/part-time employment (SEPT)</u>	6.25	4.38

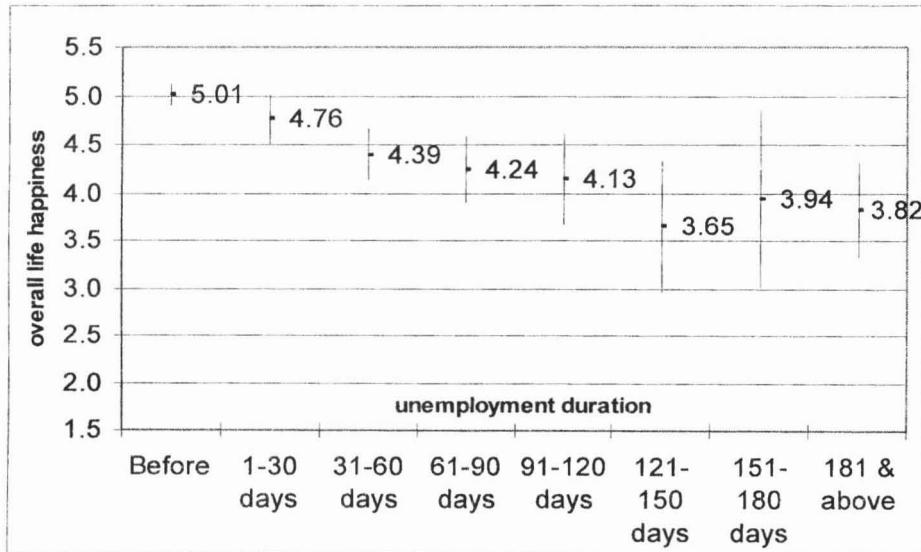
Respondents' characteristics and their mean of happiness are presented in Table 2. With respect to the discrete or continuous variables, only four variables are found to have correlation coefficient of more than 0.1 with happiness: unemployment duration (-0.2030); financial difficulties faced (-0.2841); father's education level (0.1059); and English language proficiency (0.1124). Relating to the categorical variables, Christian/Catholic graduates consist of only less than seven percent (6.73%) in the sample. Nevertheless, their mean value of life happiness is the highest (5.4286). Majority of respondents are female (72.32%). Happiness in life is also found to vary across the different types of degree, from the lowest mean value of 3.7143 (UUM Finance) to the highest value of UUM/UTAR Business Admin (5.2353). Other sample characteristics are as reported in Table 2.

Table 2: Respondents' Characteristics and Happiness

Discrete/continous variables	Mean	Correlation with happiness
Self-expected unemployment duration (weeks)	2.48	0.0237
Unemployment duration (days)	70.81	-0.2030
Self-perceived marketability of degree studied	4.63	0.0679
Financial difficulties faced	2.72	-0.2841
Father's education level	4.32	0.1059
Family size	6.31	-0.0564
English language proficiency	6.75	0.1124
Academic attainment	3.08	-0.0377
Age	23.37	0.0973
Health	4.34	-0.0086
Categorical variables	Percentage	Mean happiness
<u>Religions:</u>		
Islam	34.08	4.5303
Buddhist	44.84	4.6327
Christian/Catholic	6.73	5.4286
Others	14.35	4.1875
<u>Types of degree:</u>		
UUM Economics	8.52	3.8824
UUM Public/Development Mgt	4.93	4.5455
UUM Business Admin	10.76	5.0000
UUM Accounting	7.62	5.2353
UUM IT	12.56	4.2800
UUM Other degrees	7.62	4.6667
UUM Human Resource/Social Work	5.83	3.9091
UUM International Business/Issues Mgt	5.38	4.0909
UUM Finance	6.73	3.7143
UUM Communication	4.48	4.2000
UTAR Business Admin	7.62	5.2353
UTAR Accounting	8.07	4.8333
UTAR IT/Computer Sciences	5.38	4.9091
UTAR Other degrees	4.48	5.0000
<u>Gender:</u>		
Male	27.68	4.7544
Female	72.32	4.5000
<u>Home town:</u>		
Rural	57.59	4.6281
Non-rural (big cities and state capitals)	42.41	4.4889
<u>Car driving license:</u>		
No	21.97	3.9777
Yes	78.03	4.7229

To gain further insights into the relationship between unemployment duration and life happiness, 95% confidence intervals are estimated as shown in Figure 1. It is clear that life happiness decreases over the unemployment period with lowest mean life happiness occurs at 121-150 days of unemployed. From 121 days of unemployment, mean happiness drops from 'happy' (over 4) to 'unhappy' (less than 4). When compared to life happiness before entering the labor market (during final year studies), these drops are significant (no overlap in the estimated confidence intervals).

Fig 1: Unemployment Duration and Life Happiness



## Results and Analysis II: Ordered Logit Model

### Diagnostics tests

Table 4 presents the estimated ordered logit model. Table 3 summarizes results of diagnostics tests on the estimated model's goodness of fit. From Table 3, overall goodness of fit (the hypothesis null being all the independent variables are insignificant jointly) is found to be significant with p-value of almost zero. Result of the restriction tests (restricted individually insignificant independent variables, at 10% level being equal to zero jointly) shows that the individually insignificant variables are also insignificant jointly with p-value of 0.4523. General specification test shows that there is no evidence of wrong functional form at 5% significant level (p-value of 0.1920).

It is found that the percentage correctly predicted (Hit and Miss) for the estimated model (36.76%) is higher than the percentage correctly predicted of naïve model (19.11%). This implies that the estimated model has better predictive power. In terms of order dimensions, five out of the six estimated boundary parameters  $\mu_s$  are found to be significant. This shows the relevance of ordered dimensions. In short, the estimated models are good and no evidences of wrong function forms in the independent variables.

Table 3: Goodness of Fit Tests

	Null hypothesis	p-value
1. Likelihood ratio test: all variable jointly insignificant	All jointly insignificant	0.0003
2. Restriction test: 9 insignificant variables (in t-test)	Jointly insignificant	0.4523
3. General Specification test: $xB2$ and $xB3$ equal to zero	Model is correctly specified	0.1920
	Percentage	
1. Hit and Miss Table: estimated model naïve model (sample proportion)		36.76 19.11
2. The estimated boundary parameters: Mu2-6		Significant

### The estimated ordered logit model

Table 4 presents the estimated ordered logit model. The psychological impact of unemployment is the focus of this analysis. Nevertheless, other determinants of the graduates' life happiness are also discussed briefly. Explanation and measurement of the independent variables are presented in Appendix 1.

Table 4: Estimated Ordered Logit Model

Variables	Odds Ratio	Std Error
<b>Employment status:</b>		
Full-time employment commensurate with qual	2.4740	1.2867*
Full-time employment not commensurate with qual	1.4276	0.7762
Self-employment/part-time employment	1.6211	1.1510
<b>Job search related:</b>		
Self-expected unemployment duration (EXPUNE)	0.9451	0.1363
Unemployment duration (UNEDUR)	0.9876	0.0060**
Interaction between EXPUNE and UNEDUR	1.0025	0.0018
Self-perceived marketability of degree studied	0.7932	0.1499
Financial difficulties faced	0.7590	0.0893**
<b>Religions:</b>		
Buddhist	0.3621	0.2156*
Christian/Catholic	1.6083	1.8216
Other religions	0.2703	0.1767**

Continue (Table 4),

Variables	Odds Ratio	Std Error
<u>Types of degree:</u>		
UUM Public/Development Mgt	3.5020	2.6658*
UUM Business Admin	6.3412	4.3326***
UUM Accounting	4.8041	3.7154**
UUM IT	3.5400	2.6381*
UUM Other degrees	4.2971	4.0224
UUM Human Resource/Social Work	2.0528	1.9984
UUM International Business/Issues Mgt	2.6704	2.1765
UUM Finance	1.6939	1.3873
UUM Communication	1.2170	0.8845
UTAR Business Admin	4.9483	4.3404*
UTAR Accounting	5.3921	4.7526*
UTAR IT/Computer Sciences	5.0689	3.5708**
UTAR Other degrees	5.8297	5.2089**
<u>Family background:</u>		
Father's education level	1.1458	0.1102
Family size	1.0540	0.1172
<u>English and academic related:</u>		
English language proficiency level	1.1947	0.1370
Academic attainment	1.4938	1.1307
<u>Socio-demographic related:</u>		
Age	1.2006	0.1256*
Male	1.3547	0.5252
Health	1.0244	0.1888
Home town: rural	1.6340	0.5475
Car driving license	1.9642	0.7817
<u>Boundary parameters:</u>		
_cut1	3.8752	3.6085
_cut2	4.7839	3.6512*
_cut3	5.7584	3.6359*
_cut4	7.1192	3.6352**
_cut5	8.2887	3.6630**
cut6	10.3755	3.7577***

Notes:

\* , \*\*, and \*\*\* represent significant at 10%, 5% and 1% levels, respectively.  
 Explanation and measurement of variables are presented in Appendix 1.

From Table 4, comparing to unemployed graduates, graduates in full-time employment that is commensurate with qualification (FT1) are found to be happier. Specifically, the odds of getting happier in life for those in FT1 are 2.47 times greater than those who are unemployed, *ceteris paribus*. Nevertheless, when compared to those in full-time employment that is not commensurate with qualification (FT2) or those self-employed or part-time employment (SEPT),

this negative psychological impact of unemployment are found to be insignificant. The happiness level of those in FT2 or SEPT are higher than those unemployed but these differences are insignificant. This indicates that although unemployment is deteriorating graduates' happiness, getting 'employed' will not necessarily increase happiness significantly. Thus, in terms of life happiness, obtaining employments of FT2 and SEPT have no significant differences from being unemployed.

In terms of unemployment duration, it is found that it has significant influence on graduates' happiness. For one-day increase in unemployment duration, the odds of getting happier life happiness decrease by a factor of 0.99, *ceteris paribus*. Other significant variables are financial difficulties, religions, types of degree and age. The higher the reported financial difficulties while being unemployed, the lower the probability of getting happier in life happiness. Relating to the types of degree, it is found that the UUM Business Admin graduates have the highest life happiness. It is followed by UTAR Accounting, UTAR IT/Computer Sciences, UTAR Business Admin, UUM Accounting, UUM IT and UUM Public/Development Management. In terms of religions, Muslim, Christian and Catholic graduates are found to be happier in their life. Finally, age is found to have favourable impact on graduate's life happiness.

To gain more insights on the negative psychological impact of unemployment, the influence of employment status and unemployment duration on probability of obtaining different level of life happiness (scale 1 being "very happy" (Prob1) to happiness scale 7 being "very unhappy" (Prob7)) are predicted and plotted in graphs. These probabilities are estimated by holding other variables at their mean values respectively.

### Predicted Probabilities of happiness

Figure 2 presents the influence of employment status on graduates' life happiness. Given the happiness scale of 1 being "very happy" (Prob1) to 7 being "very unhappy" (Prob7), the predicted probabilities (Prob1- Prob7) show happiness distribution by employment status. The mid-point of the 7-scale (Prob4) is interpreted as "neither happy nor unhappy". Those who are unemployed have the highest probability of being unhappy (Prob1-Prob3) which is amounted to 26%, compared to only 12% for those with FT1, 20% for those with FT2 and 17% for those with SEPT. In terms of probability of being happy (Prob5-7), the unemployed graduates have the lowest probability (43%) compared to 65% for those with FT1, 52% for those with FT2 and 54% for those with SEPT.

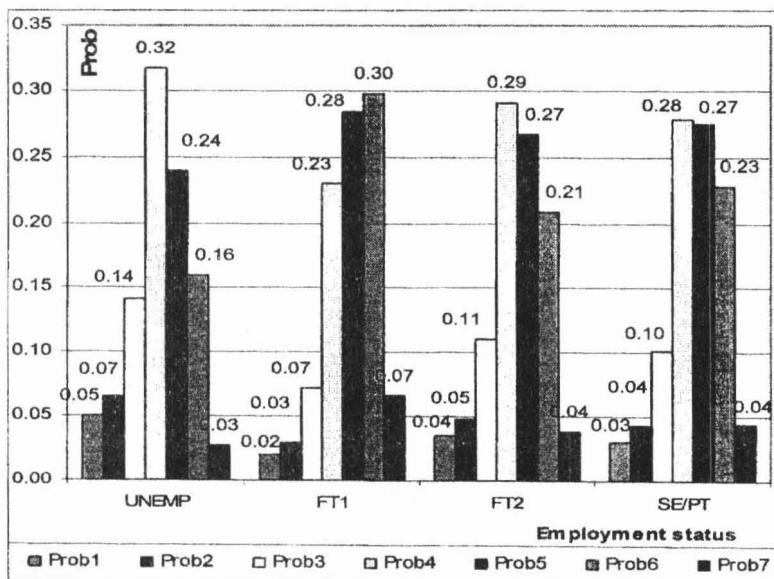


Fig 2: Impact of Employment Status on Happiness

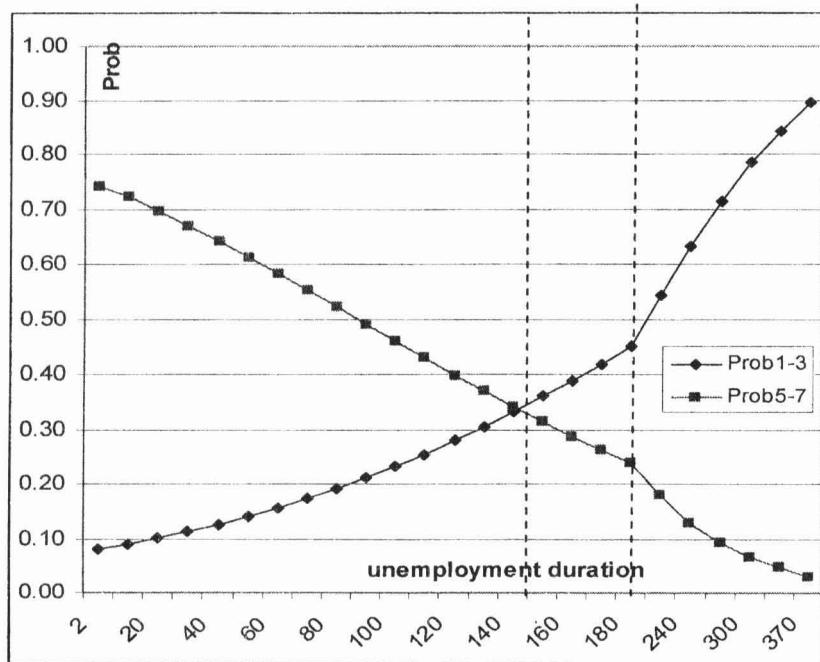


Fig 3: Impact of Unemployment Duration on Being "Happy" and "Unhappy"

Figure 3 presents effect of unemployment duration (day of unemployed) on graduate's life happiness. In general, it is observed that the influence of number of days of being unemployed is negative. For simplicity of presentation, Prob5-7 are combined as 'happy' and Prob1-3 as 'unhappy'. Figure 3 reveals that the increasing number of days of being unemployed decreases the probability of being happy and increases the probability of being unhappy. Figure 3 further reveals two interesting points. First, the probability of being happy is higher than the probability of being unhappy, up to 150 days of being unemployed. Then, from 150 days of being unemployed onwards, the probability of being unhappy is higher than the probability of being happy. This finding indicates that the unemployment duration of above five months is harmful in terms of probability of getting a chance at life happiness. Second, the decrease (increasing) of the probability of being happy (being unhappy) becomes a steeper after 180 days of unemployment. This implies that the harmful psychological impact of unemployment duration is intensified after six months unemployment.

## Discussions and Conclusion

The results of this descriptive analysis show that there is a decreasing trend on the graduates' life happiness over the duration of unemployment. Nevertheless, on the first 90 days of being unemployed, the graduates are still "happy" with the level their life happiness. There are no significant drops in life happiness on the first 30 days of being unemployed. Thus, the first 30 days of unemployed bring no significant harmful impact on happiness. Nevertheless, the results of estimated model reveal that on average, there is an evidence of negative psychological impact of unemployment. Unemployed graduates have 0.41 times lower odds of getting happier in life happiness, compared to employed graduates with full-time employment that is commensurate with their qualification. This difference is significant. The happiness of unemployed graduates is also found to be lower than the employed graduates with full-time employment that is not commensurate with their qualification, self-employed or in part-time employment. Nevertheless,

these differences are insignificant.

Unemployment duration is found to have a negative impact on graduates' happiness. There are two interesting findings on the influence of unemployment duration. First, for the first 150 days of unemployed, although the happiness is decreasing, the probability of getting happy life is still higher than the probability of getting unhappy. The graduates are still likely to have a happy life. Second, the negative influence of unemployment duration is intensified from 180 days of unemployed onwards. The graduates are very likely to have an unhappy life. In addition to the employment status and unemployment duration; financial difficulties, religions, types of degree and age are also found to be the significant determinants of graduates' life happiness.

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**Appendix 1****Definition and Measurement of Variables**

Variable abbreviation	Definition
Full-time employ commensurate with qual(FT1)	Dummy variable for FT1 (comparison group: unemployed)
Full-time employ not commensurate with qual(FT2)	Dummy variable for FT2 (comparison group: unemployed)
Self-employment/part-time employment(SEPT)	Dummy variable for SEPT(comparison group: unemployed)
Self-expected unemp duration (EXPUNE)	Self-reported (number of weeks)
Unemployment duration (UNEDUR)	The number of days unemployed
Interaction between EXPUNE and UNEDUR	Interaction variable between EXPUNE and UNEDUR
Self-perceived marketability of degree studied	Ordinal scale: 1 'low' to 7 'high'
Financial difficulties faced while unemployed	Ordinal scale: 0 'no' to 6 'high'
Buddhist	Dummy variable for Buddhist (comparison group: Islam)
Christian/Catholic	Dummy variable for Christian/Catholist (comparison group: Islam)
Other Religions	Dummy variable for Hindu/Taoism/others (comp group: Islam)
UUM Public/Development Mgt	Dummy variable (comparison group: UUM Economics)
UUM Business Admin	Dummy variable (comparison group: UUM Economics)
UUM Accounting	Dummy variable (comparison group: UUM Economics)
UUM IT	Dummy variable (comparison group: UUM Economics)
UUM Other degrees(Tourism/Edu/Tech/Dec Sc)	Dummy variable (comp group: UUM Economics)
UUM Human Resource/Social Work	Dummy variable (comparison group: UUM Economics)
UUM International Bussiness/Issues Mgt	Dummy variable (comparison group: UUM Economics)
UUM Finance	Dummy variable (comparison group: UUM Economics)
UUM Communication	Dummy variable (comparison group: UUM Economics)
UTAR Business Admin	Dummy variable (comparison group: UUM Economics)
UTAR Accounting	Dummy variable (comparison group: UUM Economics)
UTAR IT/Computer Sciences	Dummy variable (comparison group: UUM Economics)
UTAR Other degrees (Chinese/Journalism/PR)	Dummy variable (comparison group: UUM Economics)
Father's education level	Dummy variable (comparison group: UUM Economics) 1=no ;2=not complete primary;3=complete primary;4=not complete secondary;5=complete secondary;6=O level;7=A level & above
Family size	Number of persons in family
English language proficiency level	Self-perceived (Ordinal scale: 0 'non-suer' to 12 'expert-user')
Academic attainment	Cumulative Grade Point Average
Age	age in years
Male	Dummy variable for being male (comparison group: female)
Health	Self-reported (ordinal sscale: 0 'poor' to 6 'excellent').
Home town: rural	Dummy variable for home town in rural
Car driving license	Dummy variable for having a car driving license