ANALYSING SOURCES OF STRESS AMONG BUSINESS STUDENTS: EVIDENCE FROM UNIVERSITI UTARA MALAYSIA

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ABSTRAK

Tekanan boleh menyebabkan gangguan mental kepada pelajar-pelajar universiti. Ia adalah penyakit yang serius. Tahap pendidikan tinggi, beban yang berat dan hospitaliti yang tidak baik memberikan kecenderungan untuk mewujudkan tahap stres yang tinggi di kalangan pelajar. Kajian ini dijalankan untuk menentukan hubungan antara punca tekanan (interpersonal, intrapersonal, akademik, persekitaran dan bahasa) dengan tekanan pelajar. Selain itu, tahap stres pelajar perniagaan dan punca tekanan utama mereka juga dikenalpastikan. Kajian kuantitatif telah dijalankan di Universiti Utara Malaysia (UUM) dengan saiz sampel sebanyak 377 responden. Tahap tekanan mereka diukur dengan menggunakan 10-item Perceived Stress Scale (PSS) manakala punca tekanan diukur dengan menggunakan 40-item Student Stress Survey (SSS) dan 4-item Acculturative Hassles Scale for Students (AHSS). Data yang diperolehi dianalisis dengan menggunakan Statistical Packages for Social Science (SPSS) versi 20. Keputusan kajian menunjukkan tekanan pelajar yang mempunyai kaitan dengan punca interpersonal, punca akademik dan punca persekitaran. Analisis mendapati 4.0% pelajar mempunyai tekanan yang rendah, 71.3% pelajar mempunyai tekanan yang sederhana dan 24.7% pelajar mempunyai tekanan yang tinggi. Punca tekanan terpenting untuk pelajar adalah penurunan kesihatan sendiri dari punca intrapersonal (min = 3.97), peningkatan beban kerja dari punca akademik (min = 3.75), jangkaan gred yang rendah dari punca akademik (min = 3.71), jangkaan tamat pengajian dari punca akademik (min = 3.71) dan saya tidak guna pemikiran Inggeris dari punca bahasa (min = 3.58). Kesimpulannya, tekanan pelajar UUM mempunyai hubungan signifikan dengan punca interpersonal, punca akademik dan punca persekitaran. Nilai min tekanan pelajar adalah 33.0 pada tahap sederhana. Ia adalah tinggi oleh itu pengurusan universiti perlu membuat strategi yang sesuai untuk menangani isu ini.

ABSTRACT

Stress could cause mental disorder to university students. It is a serious illness. A high education level with heavy burden plus unhealthy hospitality fell on students tends to create a higher student stress level. This study was carried out to determine the relationship between stressors (interpersonal, intrapersonal, academic, environment and language) and student stress. Besides, the stress level of business students and their major stress sources were identified too. A quantitative research was conducted in Universiti Utara Malaysia (UUM) with the sample size of 377 respondents. Their stress levels were measured by using the 10-items Perceived Stress Scale (PSS) while the stressors were measured by the 40-items Student Stress Survey (SSS) and 4-items Acculturative Hassles Scale for Students (AHSS). Data obtained was analyzed by using Statistical Packages for Social Science (SPSS) version 20. Results indicated student stress had the association with interpersonal sources, academic sources and environmental sources. Analysis found out 4.0% of students had low stress, 71.3% of students had moderate stress and 24.7% of students had high stress. The major student stress sources consisted of intrapersonal source's decline in personal health (mean = 3.97), academic source's increased class workload (mean = 3.75), academic source's lower grade than anticipated (mean = 3.71), academic source's anticipation of graduation (mean = 3.71) and language source's I am not use to the English way of thinking (mean = 3.58). In short, the stress of UUM student was significantly associated with interpersonal sources, academic sources and environmental sources. The mean value of student stress was 33.0 at moderate level. It was considerably high; hence the university management needs to develop appropriate strategy to address this issue.

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LIST OF ABBREVIATIONS

UUM	Universiti Utara Malaysia
APEX	Accelerated Programme for Excellence
DAS	Depression, Anxiety and Stress
MPP	Students Representative Council
PSS	Perceived Stress Scale
SSS	Student Stress Survey
AHSS	Acculturative Hassles Scale for Students
ASSS	Acculturative Stressor Scale for Students
SPSS	Statistical Packages for Social Science
KMO	Kaiser-Meyer-Olkin
Phd	Doctor of Philosophy
H	Hypothesis
S	Stress
IP	Interpersonal
IRP	Intrapersonal
A	Academic
E	Environment
L	Language
r	Correlation Value
p	Significant Value

CHAPTER 1

INTRODUCTION

1.0 Introduction

The feeling of pressure, or more commonly known as stress, is not a new phenomenon in this competitive world. It is an intangible material. It will affect the person's state of mind unconsciously. We know the life to be a student is exciting. But it can also be very stressful and tensional. This is because there are so many things that need to achieve within a period. The student is under mental and emotional strain (Smith & Renk, 2007).

Most of the university students and workers will have a high pressure in any place or territory when they are under this condition. The pressure on the students either in academic or social cannot seem to bear especially for those who are nervous or lack confidence. Unfortunately, this had caused a high rate of student committing suicide. And, it is still on an increasing number until today (Chok, 2013). It is important for the students to seek for help before their problems become insurmountable. During the years of their university life, students should try to determine their health and seek for helps to solve the problem on their psychological, physiological and emotional matters (Arthur, 1998).

It cannot be denied that stress is a part of the daily life to every student. As a university student, the biggest sources of the pressure tend to be relationships,

academic and social conditions, environment and lifestyle (Halamandaris & Power, 1999). The other factors that may contribute to stress in university are away from home, the daily commute, financial management, staying with roommate and juggling a job, classes and relationships (Halamandaris & Power, 1999).

Stress of a student can result in several ways. It could occur due to coping with the demands of daily life. Students are likely suffered by stress because of certain kind of fear or change. A little stress in daily life does not harm a student's health. However, too much of stress will cause a negative effect (Arkoff, 1968). It can cause a lot of mental matters as well as physical problems like backaches, inability, sleeplessness, stomach problems, colds, depression and so on (Arkoff, 1968).

Actually, stress or pressure can be solved by having a suitable management (Allcock, 1996). Students must be able to handle their stress in their studies. They have to tackle the problem when they are felling too stress. Also, they need to spend time to take care of their bodies. It is important that they do not push themselves too hard. It may likely to overheat the mental and bodies (Allcock, 1996). Students can express their feelings in a way that is appropriate. Doing exercise or doing the favorite hobbies can reduce the stress as well (Allcock, 1996). They need to remember to make a life as well as a living.

1.1 Background of Study

Stress disorder can cause a very high disease burden. It is expected to show a rising trend for the incoming 20 years (Centers for Disease Control and Prevention, 2010). It is an important public health problem with a comparatively common and high prevalence. It does disrupt human life with the repetitive nature. Inability to cope with high stress in a healthy way can lead teenagers to release their pain and frustration through violence or self-injury (Mullen & Costello, 1981). Some may try to put themselves in the numb condition through isolation, reckless behaviour, liquor consumption and illegal drug use. In addition, the consequences of high stress that causing the bad behaviours and attitudes of others including aggressive behaviour, do not respect the right of laws, bad emotional ties between friends and family or the failure to control disappointment of his own (Mullen & Costello, 1981).

University students are the master of future after all. Due to this reason, university has the responsible to train all of its students to be knowledgeable, skillful and professional. Education nowadays has brought a mass of psychological changes in students. Previous study had presented the high prevalence of psychological morbidity in students were actually induced by pressure from their studies at different stages (Aktekin et al., 2001). Unfortunately, the high education level of studies processes merely gives rise to negative effects on students' life. As a matter of fact, students feel stress with the grading system. It always creates a dangerous stress level on the physical and mental welfare of students (Busari, 2012).

Undoubtedly, students can achieve well with a better creativity and higher performance under minor stress. However, strong pressure and relentless demand for higher education can affect students' behaviour emotionally or spiritually, reduce their learning, ruin their social network with public and eventually affect health care. University students are more stressful than the general population especially for those newcomers who need to face and adapt the nature of university life transition (Seyedfatemi et al., 2007; Dahlin et al., 2005).

1.2 Problem Statement

Higher education level tends to have a higher student stress level. For instance, medical students perceived a higher stress level (Abdulghani, 2008). The prevalence of stress of all types was recorded with 57% and severe stress was at 19.6% for this course. The main source of stress found to be the medical students' studies (60.3%) and home environment (2.8%). There are around 36.9% of study population did not state any source of stress (Abdulghani, 2008).

Nowadays, the rates of failure of students are increasing (Chok, 2013). Many students have to retake the course or subject in university. This is because students failed to achieve credit in their course or subject. This phenomenon becomes a problem because the number of student failure increases abruptly (Mahmud et al., 2004). They need to extend semester to repair the subjects. By doing so, stress is appeared when students afraid of certain subject and this may fail to focus on getting knowledge on that particular course (Mahmud et al., 2004).

From the previous survey as stated in National Health Morbidity Survey, the depression, anxiety and stress (DAS) level of students in 1996, 2006 and 2011 was 13%, 19.4% and 27.1% respectively (Lee, 2014). Around 6450 students surveyed in the study of mental health (Zuhrin, 2011). The result showed a high level of DAS between them. From this study, during the interview, it showed about 40% of students found it hard to cope with DAS. Among the students, 4.8% had experienced severe stress, 17.1% showed signs of severe anxiety and 5.2% had severely depressed. It concluded that it was caused by the environment, academic stress and family problems. This study also showed that 13.1% of students handled DAS well, 48.3% of students were the average, 37.7% of students were below the average while the remaining of 0.9% of students severely coped with DAS. In general, the objective of this study was aimed at screening symptoms of depression, anxiety and stress among students (Zuhrin, 2011).

Mental health problems like stress, sadness, glumness and nervous disorder between students were analysed in many researches. These kinds of psychological problems need plenty of time to diagnose and heal as always (Ko et al., 1999). In the long term, failing to discover these problems will result to a rise on psychological morbidity (Tyssen et al., 2001). Sickness is another factor that causes with stress. The sickness could bring to bear the students with undesirable consequences throughout their lives and studies. Besides that, psychological morbidity was found to have the significance and interest in these young students in other studies (Institute for Public Health, 2008; Tyssen et al., 2001; Firth-Cozens, 1987). Since students are unable to deal with this problem, they always facing it. Academic issues such as project papers, assignments

and lectures often plagued the lives of students (Muhaya, 2012). In addition, the existing language barrier has caused the students stick in the learning difficulties (Pan et al., 2010). Students from university experiencing all types of challenges associated with living conditions and academics (Khadijah et al., 2013).

This is quite common to influence their DAS. It goes without saying especially for those students who are highly related to the psychological disorders (Khadijah et al., 2013). Due to this, it is important to put in the effort to take concern on the psychological stress symptoms among university students and it can ease off the pain of these problems (Sherina et al., 2004). Needless to say, this study will help to develop an intervention in the challenging situations for student health. It can use to help students to adapt and cope with the new measures. Moreover, this is an important factor in the success of one country since the students of today will be the leader of tomorrow (Khadijah et al., 2013).

It goes to the same with the students of Universiti Utara Malaysia (UUM). The UUM at Sintok town is one of the oldest universities in Malaysia. It works to be the main university in educating and nurturing the young generations for the country (Universiti Utara Malaysia, 2012). It has a culturally diverse population. Its students are separately originating from various places with different backgrounds. A student population with different backgrounds can help to improve the result consistency especially in this research (Burchard et al., 2003; Phinney, 1992). Due to this, it has

become a right place to conduct a research without any hassle to find for a group of representative respondents (Patton, 1980).

Importantly like others, UUM students must be given the concern. It does provide such a good place to start with this research. Therefore, this research was selected to analyse the significant relationship between the variables, identify the sources of students stress and do screening on the stress level of UUM students. By doing so, it could help to discover the problems earlier before it is too late. It would be a useful evidence to hinder from the mental and health disorder and increase the quality of university in education (Student Affairs Department, 2012a).

Besides that, the Students Representative Council (MPP) in UUM is on observation about this phenomenon and they are trying to find out the solutions. Student often facing stress will experience psychological problem and hard to adapt in society (Student Affairs Department, 2012b). Consequently, this problem will affect individual feeling such as sadness and worry (Bagana et al., 2011). This will make the students feel tension and unable to concentrate their attention on the study. In conjunction to the transformation plan, there is no much of research that is being conducted to test the student stress level in UUM. Therefore, this research is important to study the stress problem in UUM and find out the sources of stress among students.

Based on the viewpoints of public well-being, it is crucial for the psychological health problems of students to have the early prevention or pre-detection in university. The

cognition of psychological problem likes DAS is a must (Gan et al., 2011). An early identification of psychological disorder among students will reduce the occurrence of psychotic disturbance. It can minimise the social deterioration that caused by this sickness (Finlay-Jones & Burvill, 1977). Their associations should be understood as well so that there are proper screening programs conducted to prevent the growth of psychological disorders in this group of people (Sherina et al., 2004).

1.3 Objectives of Study

The virtues of education have been extolled in almost every student since time immemorial (Allcock, 1996). It is supposed to be an empowering process that promotes the cultivation of social and moral values, critical thinking and creativity. Or at least, that was how students used to qualify it. But its noble aims have been leached away in our contemporary setting and driven by competition. Now, student stress is merely a hot potato issue. The objectives of this study were listed as follow:

I. To determine the relationship between interpersonal source and student stress.

II. To identify the relationship between intrapersonal source and student stress.

III. To determine the relationship between academic workload and student stress.

IV. To determine the relationship between new environment and student stress.

V. To examine the relationship between language barrier and student stress.

1.4 Research Question

Research questions are developed to reach the research purpose. It is used initially as a guide for the above objectives to how to achieve. The research questions for this study were stated as below:

I. What is the relationship between interpersonal source and student stress?

II. What is the relationship between intrapersonal source and student stress?

III. What is the relationship between academic workload and student stress?

IV. What is the relationship between new environment and student stress?

V. What is the relationship between language barrier and student stress?

1.5 Significance of Study

Significance of study means why this research is selected to find the problem and what is the expectation to achieve from this research. It is discussing the importance of a research study and coming out with a solution for improvement. In this section, it was divided into two parts as follow.

1.5.1 The Significance to Practitioner

The Department of Education Malaysia was running a stress-related assessment among the local teachers in 2013. The aim was to examine the mental and emotional of teacher today (Chok, 2013). However, students should not be neglected in this scenario. The higher authority ought to put equal attention on both sides. This is

because the cases of student stress are getting intense. And, stress does not create any beneficial interest to students (Chok, 2013). It is started with the new implementation of higher education system of Malaysia not long ago. For example, a new scheme called Accelerated Programme for Excellence (APEX) was implemented (Morni et al., 2009). The new teaching method, course schedule and academic syllabus were changed and established in local university. The abrupt changes of subject and teaching method had confused many students (Ministry of Education, 2000). Due to this, the rising number of students to go and seek for the psychiatric treatment was happened. Majority of them was diagnosed to have different level of mental disorder (Chok, 2013). Therefore, this study was selected to become an alternative for the students to have a better understanding about stress.

There are many factors to influence the emotion and behaviour of university students. Literatures had proven that university students faced a lot of difficulties in their university life (Lee & Bradley, 2005). Besides of academic factor, there are many other aspects such as environment cause, language barriers, discrimination, appetite disorder, sense of loneliness, financial problems and so on (Misra et al., 2003). This study is done for the sake to find out the major stressors among university students. It is important to wise up the stress sources that affect students' health.

When the human body faces with stress, the way of body will respond to the challenge confronted and get ready to meet a difficult situation with strength, focus, heightened alertness and stamina (Spielberger, 1979; Moberg, 1999). The stress of students was

existed because of the personal problem, interpersonal relationship problem, environmental problem and financial problem (Pomerantz et al., 2002). These problems will create stress automatically among the university students. If the problem of stress cannot handle well, then it will affect the student academic performance and they may feel irritable, miserable, lacking in energy and commitment and self-absorbed (Mahmud et al., 2004). The outcomes of this research can help students to be conscious of those problem's correlations and their significances.

1.5.2 The Significance to Academic

A good living condition is important for university students. With this, students are enabled to deal with their stress (Edward, 2011). The university administration encourages students to stay in student dorms for the first year because they need time to adapt in a new environment. This is an opportunity for students to make friends and learn to be independent in university life. Besides that, the stress of getting homesickness is commonly experienced by the students in this period (Student Health Services, 2012). The best way is to keep the ears and eyes open out of their sick minds in the middle. If students are on the edge of bursting their emotions, they should go to seek for counseling treatment (Chok, 2013). Student welfare officers, student counseling services and student unions can use this research as the reference to assist them to create the stress solutions among university students.

The orientation week and buddy system are also introduced to lower down the stress levels among students. By doing so, the new students can easily adapt to their new

lives in the university with the appropriate advices provided. Stress management seminars and campaigns are organized to help students. Students are informed to understand more about stress and any associated health risks (Arkoff, 1968). By having this study, it can help consultants to analyse the stressors and stress levels of university students. An earlier detection on these will make the problems easier to settle as prevention is better than cure. This is important for the students to increase the life of quality in the new learning environment.

Furthermore, the examination-oriented system in university will only lead to have higher pressure among university students because they are aiming to get an "A" in the exam (Elias et al., 2011). Many students claim that the good result is able to help them to apply a good job and get a high pay in the future. Apart from being outstanding in the study, students have to participate in variety of activities organized by the faculty or college in order to learn soft skills which are highly needed in the workplace today (Ko et al., 1999). As a result, the stress and time management is crucial for students living in university life. Students will able to learn the method on handling stress well from this study. It could help to strengthen the student study standard in the university.

1.6 Organization of Study

Chapter One discusses about the topic of this research which is students' stress. The background of study, its importance and question were explained here. The objectives of this study was defined and supported by the problems found.

Chapter Two includes with all the theories, definitions of the entire related stress topics and the theoretical stress sources. It gathered all the information regarding students' stress of other literatures. It also added with the explanations from other researches. They were taken as the references to show the reliability of this study.

Chapter Three shows the research framework of this study. The hypotheses were stated to follow the research design. Data analysis was provided to test results. Chapter Four divides the results into statistical analysis and descriptive analysis. Statistical analysis was ran by using SPSS software while descriptive analysis was just added with figures in order to show the respondents' percentages and frequencies. Chapter Five presents the discussion and final conclusion for this whole research. The cause and implication of students' stress were analysed. Apart from that, limitation and recommendations were added for the research in advance.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

The basic idea of stress was introduced in this part. All kinds of stressors, distress and eustress were briefly defined to know the differences. Some of the demographic characteristics were related with university student stress. The knowledge of student stress factors was discussed and explained with several literatures. The backgrounds of measurements used in this research were also highlighted and supported with previous studies.

2.1 Stress and Tension

Research indicates that 75% to 90% of all patient visits to doctors are for stress-related ailments and complaints. Stress is the insidious demon that appears in students lives via a complicated matrix (Lazarus & Folkman, 1984). The examples are coping with the task given, fighting traffic amidst time-crunched schedules, dealing with unhappy roommate, cantankerous friends, tight budgets and so on (Andrews & Wilding, 2004). The matrixes of scenarios that can trigger stress are endless. University students experience it in varying quantities throughout the days. But, they can keep it manageable with some effective stress-busting techniques (Redwood & Pollak, 2007; Folse et al., 1985).

In fact, stress can be pigeon holed into several categories. Acute stress is most common. It stems from those little spikes in demands and pressure just like a speed ride in a race car or racing to meet a deadline. In small doses, this kind of stress can be fun and exciting and help students keep feeling alert and vital. But too much of it can be exhausting (Brown & Ralph, 1999). The body responds to stress by releasing stress hormones. These hormones make blood pressure, heart rate and blood sugar levels go up. When these readings are perpetually high, it is a recipe for disaster. Thus, too much acute stress can translate to psychological distress, tension headaches, upset stomachs and a host of other symptoms (Daly & Willcock, 2002).

Students get episodic acute stress when the stress barometer ratchets up to the next level. Those who take on too much of stress will likely have too many irons in the fire (Firth, 1986). They cannot organise the slew of demands. As usual, students are hard to keep the lid on stress. They are clamouring and hoping to get attention (Linn & Zeppa, 1984). Their 'hyper scheduled' lifestyles have spawned various ailments. The symptoms can be persistent tension headaches, migraines, hypertension, chest pain and heart disease (Lee & Graham, 2001). The alarming high suicide rates amongst students in South Korea are one compelling example.

However, the apex with stress is chronic stress. It is the kind of stress that students get from unrelenting demands and pressures for seemingly interminable periods of time (Towbes & Cohen, 1996). This is the grinding stress that wreaks havoc through long term attrition. It wears students down to a final and fatal breakdown. Chronic stress

kills through suicide, violence, heart attack, stroke and perhaps cancer (Radcliffe & Lester, 2003).

2.2 Stressor

Stress is an invisible factor that will directly link to a person emotional level. It can determine through a person reaction or from body's response while stressors defined as stress that caused by personal and environmental events. Stressor could classify into favourable stressor and unfavourable stressor. Favourable stressor promotes and facilitates learning whereas unfavourable stressor refers to stressor that inhibits and suppresses learning. The cultural background, experience, personal traits and coping skills will significantly affect stress level of a person (Linn & Zeppa, 1984).

For instance, in compliance with rules and regulations is referred as one of the stressor by students. The rules and regulations are developed to control their attitudes. In the educational organization setting, compliance is the most important thing to build. Students are inevitable must comply rules. These rules are made to work as a guideline but nevertheless they bring troublesome sometimes. Some students argued that too much of regulations only create inconveniences. Rules are created for the good sake. Without rules, crime will occur. Therefore, students as part of educational organization have to confront with those stressors (Can, 2010).

2.3 Distress and Eustress

Distress is interpreted as the feeling of pain, grief and anxiety in the trouble or dangerous condition that in need of assistance. It was caused by a lack of basic needs. Moreover, it means a person with negative and repugnant states whereby his physiological or psychological process is having the tendency towards a relatively unstable homeostasis between interdependent elements (National Research Council, 2003). The developments of maladaptive state are caused by the severe and prolonged accumulated stress with damaging effects on human welfare. Distress can become the acute and chronic stress. It will happen when the biological function of the body is enough to change and overtaken solving mechanism (Moberg, 1999).

Eustress is a stressful event. However, its stress is responding from healthy and constructive outcome. Eustress is also a positive psychological presence to a stressor. Eustress considered as an active engagement and hope in work which would contribute to wellbeing and feeling. Students who experienced eustress would found meaningful with study and highly engaged in their study. In short, a student performance in study will be affected by the experience of eustress (Hargrove et al., 2013).

2.4 Stress and Demographic Characteristics

Demographic characteristics or demographic data are the stable backgrounds of this study. They are the personal factors that stabilize the variables. They are inert and remain unchanged for the whole research. Commonly, they are used to control by

researchers. The main purpose is to distinguish the personal factors from the influence of other variables. In general, age, generation status, sex identity and education level are the demographic characteristics in the study of student stress.

From the previous studies, researches did not find a deal in the case of either gender shows any difference with student stress. Some studies reported that female encountered a higher stress level than male. They were also more susceptible to problems (Carballo, 1994). On the other hands, some studies indicated that male students experienced higher stress levels than females (Mori, 2000). Another study pointed out that gender did not determine the stress of student lives. The study reported the result was caused by the difference between female status and cultures. Female students who had the role conflicts would definitely experience a higher stress. They had to think of the solutions to settle their problems (Berry, 1997).

Age and year of study can be used to estimate what will happen to university students in the future. A study found that age and year of study were depended on the number of stress event. They showed the correlations were significant. Students with the age after 14 years old withstood greater stress the students with the age before 14 years old. First year students and second year students tend to have more pressure than the students of third year or onwards (Padilla et al., 1985).

In spite of that, the age and year of study cannot be a say to the result of student stress in this research. This is because there is no much difference in term of age and year of

study among university students. Actually, there are a lot of students having the same year of study at the same age. Therefore, some studies used undergraduate, postgraduate and graduate student to diversify the age variations. Still, most of the results did not show any difference between the groups when they were used to measure the stress level (Padilla et al., 1985).

The level of education is always found to have strong negative linear correlations with stress (Berry, 1997). Students with higher levels of education will have more solving resources and skills (Lazarus & Folkman, 1984). They have more experiences and acquire more knowledge in coping problems. Those sensation and notion help them less susceptible to stress (Berry et al., 1987).

Ethnic differentiation creates cultural distance. It happens between races with their civilizing influence of different cultures (Berry and Annis, 1974). The small cultural distance is good to make a harmony community, whereas the large cultural distance will likely to have conflict. Thus, cultural learning is needed to have more understanding to each other. But, this will cause a higher stress level since more races will need more cultural learning (Berry, 1997). To students, the conflicts of culture are caused by different value perceptions, behaviours and social norms when they have contacts with other races (James, 1997). Many studies indicated that Chinese university students had higher degree of interpersonal stress than other races. They had higher expectations in academic, behaved differently and showed apathy to other religions (Pan et al., 2010).

2.5 Student Stress Source

Student stress source is the original cause which means circumstance, fact or influence that contributes to a result or outcome. It is important to the study. This is because it is relevant to the result and brings out the effect of an action or condition. The student stress source of this study will be explained further as follows.

2.5.1 Interpersonal Source

Interpersonal stress of university students is occurred when the students are having the poor functioning with their social networks. The students find themselves are lacking of friends. They are falling in the hardships and difficulties of poor personal relationship. The healthy interpersonal relationships are generated and developed from the student's experience. Students can either build the relationships with friends, professors, co-workers, roommates, romantic partners or strengthening the coexistence relationships at home. They will find themselves engaged with other people in all aspects of their lives. Positive interpersonal relationship between societies has been shown to increase academic motivation, achievement and engagement (Darling et al., 2007). The university authority plays an important role in assisting students to develop interaction skills and interpersonal communication. It is good to have the standards for happiness and healthy relationships in the future.

A healthy lifestyle is always associated with the improvement of interpersonal relationships. This is because a good interpersonal relationship will has the social support. Undoubtedly, by having the social support, students will feel happier. Thus,

the chronic diseases have the lower risks since they may cure better with showing better health behaviours and low stress (Viswanath & Bond, 2007). Student with ability to integrate into the social environment and maintain the good interaction with friends is often associated with a no stress lifestyle (Uchino, 2004; Viswanath & Bond, 2007).

There was a study with the total of 841 students' samples from various backgrounds. From the research, it showed that all the ages from men and women had lower stress levels by participating in regular physical activity (Ah et al., 2004). Another study did evaluation on 232 college students. It showed that the more active students had a lower stress within them in social life. This was because they identified the problems better and used to solve the problems more effectively by using their social network (Largo-Wight et al., 2005). An earlier research had proven that low anxiety and depression had low stress levels among the students. However, they were inversely proportionate with the students' life satisfaction (Weinstein & Laverghetta, 2009). The research of physical activity for antidepressant effects was tested by 188 male and 193 female university students. The result showed that students who always exercised were low in depression and high with self-esteem (Ryan, 2008).

There was one study mentioned about the importance of interpersonal relationships, social support and physical activity. The study showed that the health of 3,268 students was influenced by physical activity and interpersonal relationships. The author concluded that the health of students was associated with the stress levels and

social environment. Moreover, the study found that the social ties and physical activity correlated with students stress level. Students had better social ties and enhanced physical activities from the result (Aanes et al., 2010). Based on the aforementioned arguments, this study will like to hypothesize that:

H1: Student affected by stress is significantly associated with interpersonal source.

2.5.2 Intrapersonal Source

Intrapersonal stress occurs within the student alone. In common, students handle with intrapersonal stress on a regular basis. The stress resolution skill is the one that gives student to gain a better understanding of him personally. Student intrapersonal stress refers to the individual ability of student in connecting with his own understanding during high pressure situation. Usually, the intrapersonal stress exists when students have the conflict and argument on something internally. In other words, students feel intrapersonal stressful situations when they are unable to handle difficult situations. They act out in ways that may seem driven by anger. They can interfere to friends and family by doing like this (Cohen et al., 1983; Redhwan et al., 2009).

Intrapersonal stress is different from interpersonal stress. The conflict of intrapersonal stress arises individually while the conflict of interpersonal stress happens between two individuals. Students need to develop effective self-care habits in order to solve the stress problems (Muhamad et al., 2010). In the university, students have to find a trustworthy friend for the unconcealed discussions about stressful situations. That friend should be clever with thinking of effective solutions to deal with stress. Besides

that, students can manage the stress better by learning to effectively communicate with family members where they can articulate the needs and feelings better off (Cuthbertson et al., 2004). Students can help to reduce stresses by caring for the physical activities such as exercise which bring advantage to health (Nor & Abdul, 2012).

Researchers have found out regular physical activity for a healthy life has a lot of benefits. Regular physical activity can decrease the chances to fall in sick. The risky illnesses such as high blood pressure, diabetes, heart disease and cancers can be reduced (Allender et al., 2008). When students participate in regular physical activity, this will enhance the health of psychosocial stressor. This is important for the university freshmen when they are coming to the new environment. They are the high risk group and tend to possess the unhealthy behaviours in the campus due to the irregular physical activities (Economos et al., 2008).

High pressures promote and give rise to physical inactivity. For university students, the unhealthy behaviours can be chronic diseases, academic workload, social lifestyle, hostel functions and family events (Economos et al., 2008). Most of the university students are having the age of 18 to 25 in between. This group of people is less active and is lower than the other adults in term of having regular physical activity. Overall, they are involved in less than the recommended 30 minutes of moderate to vigorous exercise per day (Centers for Disease Control and Prevention, 2010). A study was done to assess the changes in physical activity of university freshman. The result

demonstrated the female freshman had a decreased degree of physical activity after the transition to a new place (Butler, 2004). This is especially worrisome because it indicated students were building their health behaviours in university. The development of unhealthy behaviours is then continued to establish. It might apply to a longer period of time even after the students have graduated (Laska, 2010).

Stress can influence health behaviour. The degree of stress depends on students' abilities and demands needed in coping with the situations. Stress exists when students face challenges as exceeding their handling limitation (Nguyen-Michel et al., 2006). University students are exposed to various stress factors which are academic, social pressures, culture challenges, staying in a strange environment and so on. Latterly, a study evaluated 145 student's stress level at college with the effects on health habits, health status and self-esteem. It found that students suffered with higher stress had poorer eating habits and lacked of physical inactivity (Hudd et al., 2000). Also, the study showed that athletes and female students were significantly less active. Whereas, the male students who were not athletes like to adopt a healthy lifestyle by having a regular daily jogging regime. All of these results caused to the poorer health habits (Hudd et al., 2000). Based on the aforementioned arguments, this study will like to hypothesize that:

H2: Student affected by stress is significantly associated with intrapersonal source.

2.5.3 Academic Source

Academic stress is the study of stress that felt trouble, tire, unable to make the deal, depress and even paralysis in the learning state. It is also a self-tuning or adjustment of emotional response in the academic learning. Four factors had led to academic stress in the study, namely personal factors, family factors, school factors and social factors (Harvey et al., 2006). The sources of academic stress in the personal aspect including the high academic expectations and targets, disciplinary pressure, unsatisfactory results, public speaking, fear of failure, health condition, lack of concentration and poor time management (Misra et al., 2000; Reisberg 2000). For parents, they expect too much. Many parents like to compare academic achievements. They are less likely to praise their children on good results but more likely to scold them on bad results. Some parents may force their children to take tuitions and studies. In university, poor teaching methods and poor lessons from lecturers, excessive dictation quizzes and examinations, heavy assignments and workloads are the major sources for students (Bush et al., 1985; Hughes, 2005). From the peer side, it contains of fierce competitions, stiffness relationships or peer violence.

High expectation of academic performance from parents and students has shown the dominant tendency to have higher academic stress and depression (Hughes, 2005). The inappropriate intervention period will cause a lot of pressure on young people (Macan et al., 1990; Nonis et al., 1998). It leads to severe stress and depressive inclinations too. However, students will have positive stress feels when they have the self-confidences (Abouserie, 1994). They believe they can be successful to achieve

the target. The academic stress can protect them indirectly from the harm such as worry or anxiety (Schafer, 1996).

The moderate academic stress is the driving force for study progress. But, stress will create the negative effects to university students when it is too much or too little. Once the physical and mental of one person are fully filled with stress, sickness will come (Mechanic, 1978). If there is no solution to reduce the stress, it may bring hazardous to the students especially mental health problems (Hardy, 2003). For instance, the psychological pressure will cause students to feel frustrated, anxiety, oppression, distress, self-injured, the negative emotional feelings and so on (Mechanic, 1978).

Students have the behavioural deviance because of pressure (Bush et al., 1985). As mentioned, academic stress has its pro and con especially on the aspect of schoolwork. Students get to create success in their studies if they face the stress in a good state. It even may bring with senses of remarkable accomplishment to students. But, if the student pressure is too high, it will turn out with unstable psychology (Gadzella et al., 1998). The influence can be expandable and causes devastating injury on impact. It cannot be denied that student is not an easy occupation nowadays. Students have to endure many things in this modern age (Hardy, 2003). Academic stress is one of the main stressor for students. A study found that the stress on life events has a significant relationship with the students' conduct. It had resulted with deviant behaviours such as excessive alcohol and smoking consumptions, nervous, overeating or loss of appetite and so on. These are not only the bad behaviours. Also, they are determining

the extent of student health (Gan et al., 2011; Mechanic, 1978). Based on the aforementioned arguments, this study will like to hypothesize that:

H3: Student affected by stress is significantly associated with academic source.

2.5.4 Environmental Source

To come into a new environment, students lost their original network of social support. The reason is not merely because of geographical separation but there is also due to the culture differentiation (Lin et al., 2001). In the modern era, socialistic cultures are everywhere. University students are encouraged not to have the selfish acts and burden their friends (Markus & Kitayama, 1991). Some of the students may face stress in the university. However, they choose not to share with their good friends or family members just to keep the trouble away from other people (Constantine et al., 2004). In fact, they tend to keep secret and hide their hardship rather than tell it out. They even may tell white lie for the worry caused.

In addition, some families have the serious conflicts of intergeneration (Chan & Leong, 1994). In Korean and Japanese culture, the younger youth must obey to their parents. They need to show respect and listen to their advices (Maki & Kitano, 2002). This kind of perception in that environment may create an unhealthy contact in ideas and feelings exchange. The low interaction between parent and children is showing the low relationship of one family. Less communication may cause student to stop sharing with parents. Obviously, this is a culture matter which brings up a negative environment to the society (Chung, 1992).

Meanwhile, some of the undergraduate university students are not able to do things without family. They rely on family members for their supports. They are not independent (Students Health Services, 2012). Students who live in campus are often affected by their new transition from home to university. They were left to make decisions on working with their physical activity (Halamandaris & Power, 1999). The practice of exercises is often ignored by students when there is the interference in internal affairs (Insel & Roth, 1985; Hudd et al., 2000). Apart from that, physical activity can be influenced by other factors such as ethnicity and race (McArthur & Raedeke, 2009). Another research inspected that ethnicity and race are very closely related to physical activity actions. A study of college students' physical activity behaviour assessed 238 African American students and 197 Caucasian American students respectively (Blanchard et al., 2008). The study found that African American students did less exercise and less active than Caucasian American.

Generally, students do not get enough supports and helps from the local community when they are in the new environment. A study pointed out that students did not get any aid from the society all around especially for immigrant students (Berry et al., 1987). For them, they always lack of social support and seem helpless. This was due to the problem with lacking of full-scale social networks. Several research papers have found the advantages of building friendship between students to conquer the new transitional environment. Some of the local students like to help the international students and make friends with them (Abe et al., 1998). The level of stress in university was correlated with the desire of one student in making new friends. The

sociable students were experienced lower stress level in university (Poyrazli et al., 2004).

Nevertheless, there is a study showed that most foreign students did not be friend with local friends. It had two reasons. The first reason was the limitation of chances. The second reason was due to the dislike attitude in excluding from making new friends (Frey & Roysircar, 2006). Another study noted that Asian people have to post a social interaction commitment (Chung, 1992). Different people will have different views while different cultures will have different environment. Many foreign students think western students has less sincere in treating friendship (Mori, 2000). Therefore, the foreign students only like to hang out with the group of same countries, races or thoughts (Yeh & Inose, 2003). Based on the aforementioned arguments, this study will like to hypothesize that:

H4: Student affected by stress is significantly associated with environment source.

2.5.5 Language Source

Language is functioning to communicate and exchange the ideas by people. It is the main element to show the personal identity of one person. It allows one to convey a thought, feeling, emotion, talk and share knowledge and messages. Language is the biggest connecting link that allows us to understand and communicate each other. English barrier is an obstacle that keeps students apart or prevents communication (Imberti, 2007). Students have the incapacity to speak English. They indicate the language deficiency as the main reason for stress in study (Frey & Roysircar, 2006).

Students stated that they faced the difficulty to express their opinions in the class. They felt stressful when they did not understand to what the lecturers or friends had discussed. They even blamed themselves due to the obstructions they were facing. Thus, they continued not to interact with other people by using English (Constantine et al., 2004; Liu, 2009; Yeh & Inose, 2002).

There was a research studied about the language barrier of university student in American universities. In comparison to the international students from English native countries, the Chinese students from China need a longer period to adapt to the unacquainted transition (Liu, 2009). In the process to familiar with English environment, they were hardly to express the accessible knowledge and ideas freely by themselves in the classes and livings. They used a longer period to develop the words. The English obstacle had correspondingly brought a sense of neglected feeling psychologically. This had induced to become an occasioned stress (Kuo & Roysircar, 2004; Liu, 2009; Yeh & Inose, 2002).

A study showed that students who were not fluent in speaking would feel higher stress. Those students suffered from higher study pressures significantly than other students (Alginahi et al., 2009). In reality, most of Chinese students in America has language barrier. They do better in the writing than speaking when using English. This study had found an interesting phenomenon among them. The Chinese students claimed the language obstacle as cross-cultural tension (Lin & Betz, 2009). Correspondingly, this was found to be the most important factor in this research rather

than the results they obtained in English examination. According to the students, the more confident they were in speaking ability, the much lower in cross-cultural tension level (Lin & Betz, 2009; Shen & Takeuchi, 2001).

Besides that, language deficiency creates difficulties not only in learning. It also makes students difficult to social integration. This kind of disadvantage will hinder the university students from joining with new university friends. This is because they are worry with the shames they encounter later. They scare their classmates will laugh at them because of the language grammar errors they are committed in class. However, the more they avoid form socializing, the slower they learn. It will become hard to improve their language skills. Interpersonal factor is going to determine the ability to improve the English level from getting into the vicious cycle (Dao et al., 2007). Based on the aforementioned arguments, this study will like to hypothesize that:

H5: Student affected by stress is significantly associated with language source.

2.6 Chapter Summary

This chapter was depicted to provide a basic understanding to this study. Based on the findings, references were easily to get throughout all places. There were many factors to influence the stress of students. The similarity regarding the stress studies were low. Different views and researches were found and the results also showed differently to one same factor applied. Thus, only the same ideas of literatures were selected to discuss in order to avoid any confusion to this study. The stress sources of students were the important elements to determine from literature reviews.

CHAPTER 3

METHODOLOGY

3.0 Introduction

Methodology is an important element in this study because it determines which method is going to be used to analysis the data in this study. The topics were research design, theoretical framework, hypothesis, the data collection of this study, population and sample size, research instrumentation and data analysis.

3.1 Study Area

The main area of this research was focusing on Universiti Utara Malaysia (UUM). UUM was incorporated on 16th February 1984 with the unique mission to provide academic excellence in the areas of business management education and quality management. The campus is located near to Bukit Kayu Hitam. It is a small town at the Malaysian and Thai border. It is the main entrance for the foreigners going into Malaysia from the north through Thailand. The huge campus, which cost RM 580 million, started its operation on 15th September 1990. It comprises of 15 residential colleges which is able to accommodate 20,000 students in total. UUM is one of the very few local universities that offer full accommodation to its students. In the campus, the main buildings such as academic buildings, Chancellery, Sultanah Bahiyah Library, Mu'adzam Shah Hall and Tan Sri Othman Hall are included. Apart from that, other buildings are like Sultan Badlishah Mosque, Varsity Mall, Student Union Building and the sports complex (Universiti Utara Malaysia, 2012).

UUM has the vision to become one of the best universities in Malaysia. In line with that, UUM had launched a UUM Transformation Plan recently. The UUM Transformation Plan is a roadmap that is used to plan a systematic academic for the stakeholders (Universiti Utara Malaysia, 2012). It cannot be denied that students as a whole are involved in the transformation plan indirectly. Therefore, the administrator of UUM has to take concern to the condition of students. Stress is generally faced by the students. This was the reason for the existence of this research so that the plan can fully fit with them.

3.2 Research Design

Generally, this was a cross-sectional study combined with quantitative research. Cross-sectional study is widely used in the psychology development (Elias et al., 2011). It is using in different groups of people which are varies with interest's variables but sharing certain characteristics such as ethnicity, socioeconomic or status educational background. Quantitative research is based broadly on the ideals of positivism. It assumes the reality basis is waiting to be discovered. The laws of nature are operating according to rational and logical reasoning. The ideal of quantitative research is designed to identify the research hypotheses. It also attempts to prove whether the hypotheses in this study are correct and have relationships with the variables (Pulido-Martos et al., 2012).

Quantitative method relies on the ability of researcher to measure the phenomena under investigation. It also depends on statistics very much in order to analyse the data gathered from questionnaire survey. A well-designed questionnaire will provide an accurate and useable data. By such, this will convince researcher to write the report

(Cavana et al., 2001). Therefore, in this research, questionnaires were selected as the research method to do the survey in data collection. The flow of methods conducted in this study was shown in Figure 3.1.

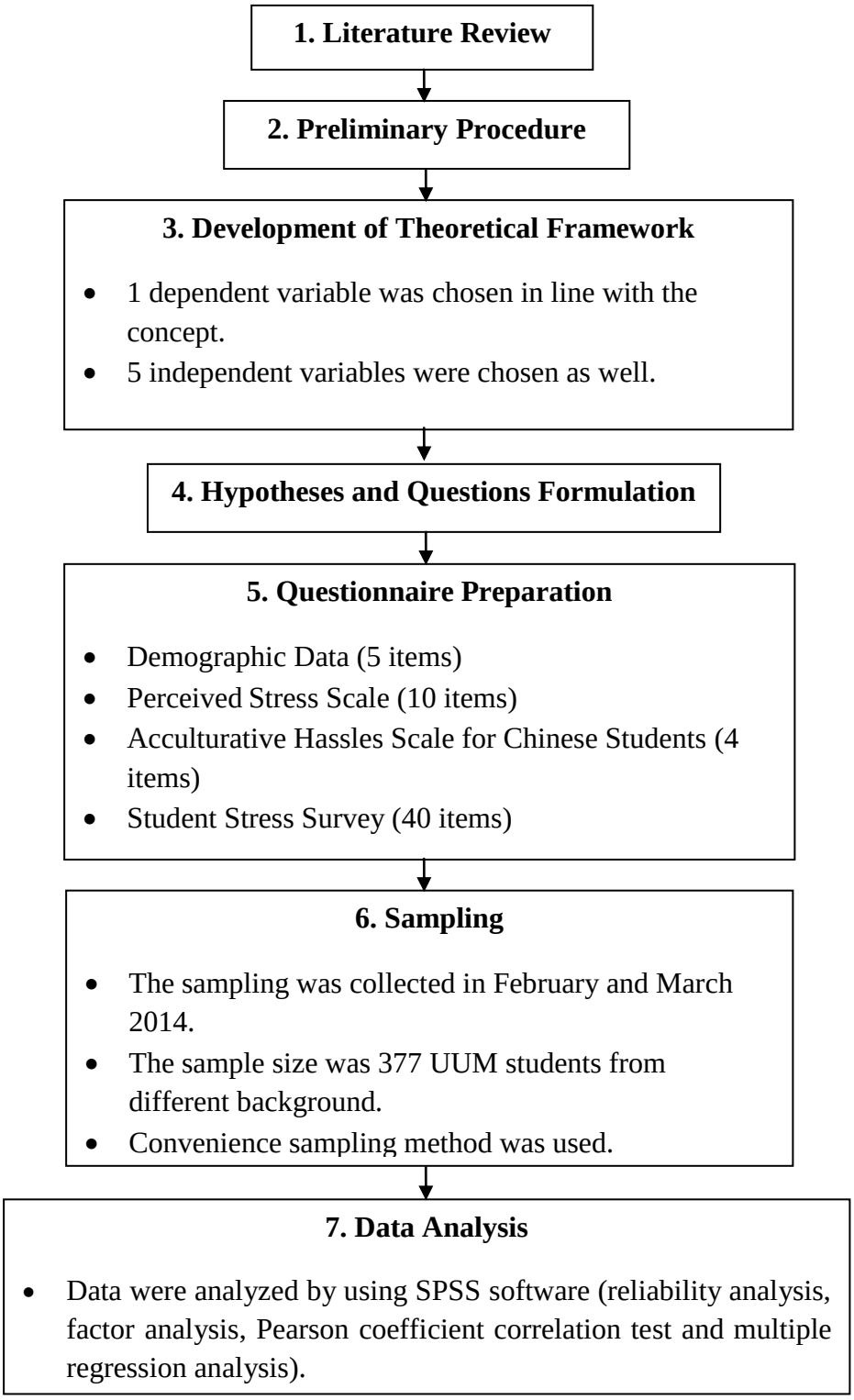

Figure 3.1 The flow chart of research methodology design

3.3 Theoretical Framework

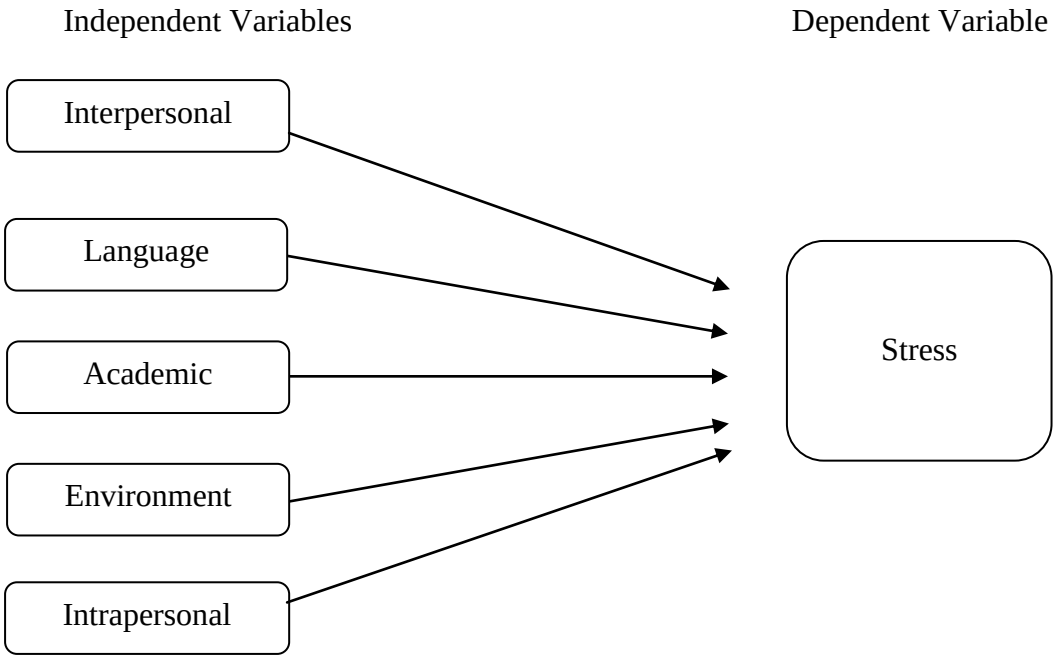

Figure 3.2 Theoretical framework of analysing sources of stress among business students: evidence from UUM

Stress was the main variable that was needed to determine in this research. Since it was the interest of this study, it was selected as the dependent variable. The remaining five independent variables consisted of interpersonal, language, intrapersonal, academic and environment. Their functions were to explain the variance in influencing the student stress level.

Interpersonal sources resulted from the interactions with other people. The interpersonal stressors appear when there are interactions between people to people. For example, the arguments with close friends and parents. These kinds of arguments

are the daily hassles. The occurrences are high. University students are taught and nurtured to think independently (Ross et al., 2008). Due to this reason, the stress will form when there is a different point of view. Same thing happens to new girl or boyfriend. Stress will exist within a couple if they do not tolerate each other. The relationship with a boyfriend or girlfriend may bring up to a stressful problem (Ross et al., 2008).

The stress of language learning is commonly happened in multiracial countries. Malaysia is one of them. The Malaysia university students usually learn to speak at least two or more types of language. Students find it stressful and difficult in language learning. It is undeniable that language learning is not easy at all especially when it comes to the learning of technical terms and speaks in another language. For instance, Malaysia students have to take a university degree in English which they only learned English for several years. Outsiders can imagine the pressure that they have to go through to upgrade their language level in the shortest possible time and use it immediately in the higher education environment. Generally, students learn to speak in monotone without colour and feeling given (Hovey et al., 2006). It does not mean anything. They may feel the language. Just that, they do not know how to use intonation to convey it. Students who have problems with intonation speak the language differently by using their own rules. Using the wrong word in a sentence can lead to misunderstanding (Frey & Roysircar, 2006). The meaning or intention of the speaker may not be at all well presented. Listeners will confuse and this is definitely not good for communication. Many students speak with a flat sound and sometimes the sentence hears like a statement. They often have difficulty in imitating the

intonation's rise instead of fall. They will feel stressed out to find ways to speak with the right pitch to convey the words (Hovey et al., 2006).

Academic stress is generated from the university related activities and issues. The new students may bring strain or stress when they enter to the university. This is because university students face a changing education system, lifestyle and social environment. University students need to reach certain levels of academic achievement to graduate. The academic achievement is determined by their performance during classroom activities, assignments, presentations and examinations (Wan et al., 1992; Busari, 2012).

In terms of environment factor, stress is most likely to occur in situations where demands are high and the amount of control in an individual is low. Normally, this kind of situation is out of expectation from the student. Student has limited support or help available (Gall et al., 2000).

Intrapersonal sources come from internal sources like the changes of habit in student life. The impact of sudden change in life is hazardous. It will affect a person's lifestyle and health physically and mentally. The consequences by not solving the problems may leave a person to have a continuous emotional disturbance (Elias et al., 2011).

3.4 The Background of Research Measurement

Research measurement is a scientific protocol in the form of questionnaires, surveys, tests, ratings or scales. It is a device that is constructed to determine and obtain data (variables, features and information of interest) from respondents. A cautious planning for data collection is a must to achieve the objective of study. Data collection tools such as interview or survey must be depicted and explained. In order to save time, the validated collection instrument is normally selected to enhance the credibility of the study. When the data collection procedure is well established, a completion timeline will be set (Pierce, 2009).

3.4.1 Perceived Stress Scale

Perceived stress is a common topic and issue among people. It has been threatening to the community both physically and psychologically. Many stress theory were developed on stress event evaluation. Yet, there is very little development solely measuring on perceived stress. The most frequently instrument used is the Perceived Stress Scale (PSS). PSS is a survey of the extent to the stressful situations in people life. The items of PSS were designed to explore how the respondents looking for their lives under the uncertain and uncontrolled burden. Moreover, this scale has some direct questions that indicate of the recent stress experiences. The questions are general in nature. Therefore, they are applicable freely with no specific content to any sub-population group. The items of PSS measure about the thoughts and feelings of respondents in the past month. Respondents are answering the questionnaires based on the frequency of stress they felt (Cohen et al., 1983).

PSS is a well-known instrument for evaluating stress. Originally, PSS was constructed into a 14 items instrument. Then, another version of PSS had created in 1988. It was the 10-items scale. Generally, there are three types of PSS. Each of them has different number of items and they are 4-items scale, 10-items scale and 14-items scale. The version of 10-items scale is highly proposed because it has the maximum reliability with Cronbach's alpha coefficient of 0.78. According to the authors, the new PSS was constructed and allowed assessment to find out stress without losing any psychometric quality. While, the version of 4-items scale is more commonly used for telephone interviews. It is also applied in the critical situations when there are limited in time. These scales are less likely to measure the reaction of people to the stress events. They are more functioning to measure the quantity of stress in a people life. They are widely used in health researches both physically and mentally (Cohen & Williamson, 1988).

3.4.2 Student Stress Survey

The Student Stress Scale focuses on events that may occur in the life of a student to offer respondent a different perspective for evaluating stress. This scale is an adaptation for university students of the life events scale. It was designed to predict the likelihood of disease and illness following exposure to stressful life events. Each life event is given a score that indicates the amount of readjustment a person has to make as a result of change. Some studies have found that people with serious illnesses tend to have higher scores on the assessments (Insel & Roth, 1985).

For each event that occurred in respondent's life within a period, the result is recorded. If an event occurred more than once, the number of times the event occurred is multiplied by its score. Finally, the total of points of all events that respondent has went through in the past one year is added up to determine the stress score. The total points of respondent experiencing with scores of 300 or higher showed a high health risk. Likewise, the total scores between 150 and 300 points meant about a 50% chance of having serious health change in two years time. For those respondents who got scoring below 150 will have a 1/3 chance of serious health change (Insel & Roth, 1985).

Actually, Student Stress Survey (SSS) was modified from Student Stress Scale. It has 40 stressors with the similar items just like Student Stress Scale. SSS is only used to determine the stressor while Student Stress Survey can be used to measure the stress level besides in looking for the stressors. The Cronbach's alpha coefficient of SSS was 0.78 (Pulido-Martos et al., 2012; Insel & Roth, 1985).

3.4.3 Acculturative Hassles Scale for Students

Acculturation is explained as the process of change that occurs to a person in a cross-cultural situation. In a word, it is the influence of contact with another culture from the culture of origin (Berry, 1990). For instance, China students experienced the process of acculturation in Hong Kong because of the cultural differences between Hong Kong and mainland China (Chan, 2002). The acculturative stress is inherent in the process of adaptation to a new culture (Perez et al., 2002). It is defined as the

conflicts, difficulties or stressors arising from the cross-cultural adaption (Joiner & Walker, 2002).

Acculturative Hassles Scale for Students (AHSS) is a study related to the acculturative stress and cross-cultural adaption by students. In fact, it was a research on university students studying in Hong Kong. Like Malaysia, Hong Kong was a colony of the Britain during the 19th century. After its handover to China in 1997, Hong Kong became the choices for the students from China to pursue education in foreign country. Before this, there was no scale available to test the acculturative stress of China students. Thus, a scale known as Acculturative Stressor Scale for Students (ASSS) was firstly designed. It had 18 items. Those items were categorized into four factors and they were language deficiency, cultural difference, academic work and social interaction (Pan et al., 2008).

After that, it was amended into 17-item AHSS scale by a further in-depth analysis. The factors remained unchanged with the four same factors. The purpose to do this was to validate the newly scale from the old one to be more relevant in acculturative stress measurement. The Cronbach's alpha coefficient for AHSS was 0.88 and the Guttman split-half reliability for AHSS was 0.86. The Cronbach's alpha coefficients for the four factors: language deficiency, academic work, cultural difference and social interaction were 0.81, 0.74, 0.76 and 0.74 respectively. Whereas, the Guttman split-half reliability for the four factors: language deficiency, academic work, cultural

difference and social interaction were 0.79, 0.71, 0.76 and 0.76 respectively (Pan et al., 2010).

3.5 Research Instrumentation

The questionnaire consisted of four parts. They were demographic data, Perceived Stress Scale, Student Stress Survey and Acculturative Hassles Scale for Chinese Students. The demographic data had 5 items and they were gender, ethnicity, age, level of education and year of study. The choices were selected accordingly by respondents. The remaining three instruments will be explained as follow.

3.5.1 Perceived Stress Scale

In order to get the stress level of students for this study, Perceived Stress Scale was selected as the stress scale assessment. Perceived Stress Scale is the most popular stress assessment instrument. It is widely used and easy to understand. It was created in 1988. It helps the respondents and researchers to know how different situations affect to the respondent's feelings and perceived stresses (Cohen & Williamson, 1988). The questions in this scale were asking about the feelings and thoughts of respondent for the last month. In each case, respondent was asked to show how often he felt or thought. Some of the questions may similar but there are differences between them. Respondent shall be able to answer every question. The best way was to answer fairly and quickly.

In this research, Likert scale was adapted and changed to represent the score. The items were rated with the frequency scale of 5 points (1 = never, 2 = rarely, 3 = sometime, 4 = often, 5 = always). Respondent could determine his score by following the directions. Firstly, the answers were the scores. The scores for all the questions were 1 = 1, 2 = 2, 3 = 3, 4 = 4 and 5 = 5. But, the scores for questions 4, 5, 7, & 8 were reversed. For example, for questions 5, the score was changed as followed: 1 = 5, 2 = 4, 3 = 3, 4 = 2 and 5 = 1 (Vagias, 2006). Later, the scores were added up to get the total. The scores on Perceived Stress Scale were ranging from 10 to 50. Higher scores represented a higher perceived stress. Scores ranged from 10-23 would be considered low stress. Scores ranged from 24-36 would be considered moderate stress. Scores ranged from 37-50 would be considered high perceived stress. The methodology design of Perceived Stress Scale was shown in Figure 3.3.

3.5.2 Student Stress Survey

Student Stress Survey was selected to be another stress scale assessment in this study. It was used to find out the sources of stressors among students. This survey was containing 40 items. Each of them possibly was the latent and prospective cause of stress given by the students. It was the example of stressful events. To make the things clearer, the scale was divided into four parts of potential stress sources. They were interpersonal sources of stress (6 items – item 1 to item 6), intrapersonal sources of stress (16 items – item 7 to item 22), academic sources of stress (8 items – item 23 to item 30) and environmental sources of stress (10 items – item 31 to item 40). All the items were designed to follow the student lifestyles either they were the major problems or daily activities of students (Insel & Roth, 1985).

Interpersonal sources come from the interaction of people. They are the reciprocal actions and influences that are affecting one another such as fighting and quarrel. Intrapersonal sources create from the existing or occurring of the individual alone. Anything that occurs and comes across to a person self internally is considered as intrapersonal sources. The sources can be the personal health problems, habits or own beliefs. Academic sources result from the university problems or issues such as the grade and workload. Environmental sources relating to or arising from a person's surroundings. The sources related to the natural world and the impact of activity on its condition such as the change of living condition (Insel & Roth, 1985). In the survey, respondent was given 5 points Likert scale likes Perceived Stress Scale to answer the 40 items that they had experienced during their study. The methodology design of Student Stress Survey was shown in Figure 3.3.

3.5.3 Acculturative Hassles Scale for Students

Similarly, Acculturative Hassles Scale for Students was chosen as one of the stress scale assessment in this research. It was used to be a suitable tool to detect the sources of stressors among university students. This scale originally has 17 items. They are divided into four categories which are language deficiency, academic work, cultural difference and social interaction. The validity and reliability test of the scale was reported with Cronbach's alpha coefficient 0.88 in the previous literature (Pan et al., 2010). Therefore, it was selected to test the language variable.

The scale was developed as referred to the China students. It was undeniable the scale is full of Chinese culture. Also, it was doubtful and contestable whether it can be a common scale and applied to other students. From the point of view, UUM students have the language deficiency just like the China students. English is not their mother tongue for most of the UUM students.

In comparison, both of the conceptualization of stress and acculturative stress showed similarity in cross-cultural adaptation, conflicts and difficulties in interaction between the environment and the individual. Other similarity was like imbalance between environmental demand and a person's perception in the host society (Pan et al., 2010). The scale did not have differences. It was the general stress and experienced by everyone. Out of 17 items, most of the item was removed because of the repetition. Only four items were selected and adapted to be used to test the language variable. In the survey, respondent was given 5 points Likert scale likes Perceived Stress Scale to answer the four items that they had experienced during their study. The methodology design of Acculturative Hassles Scale for Students was shown in Figure 3.3.

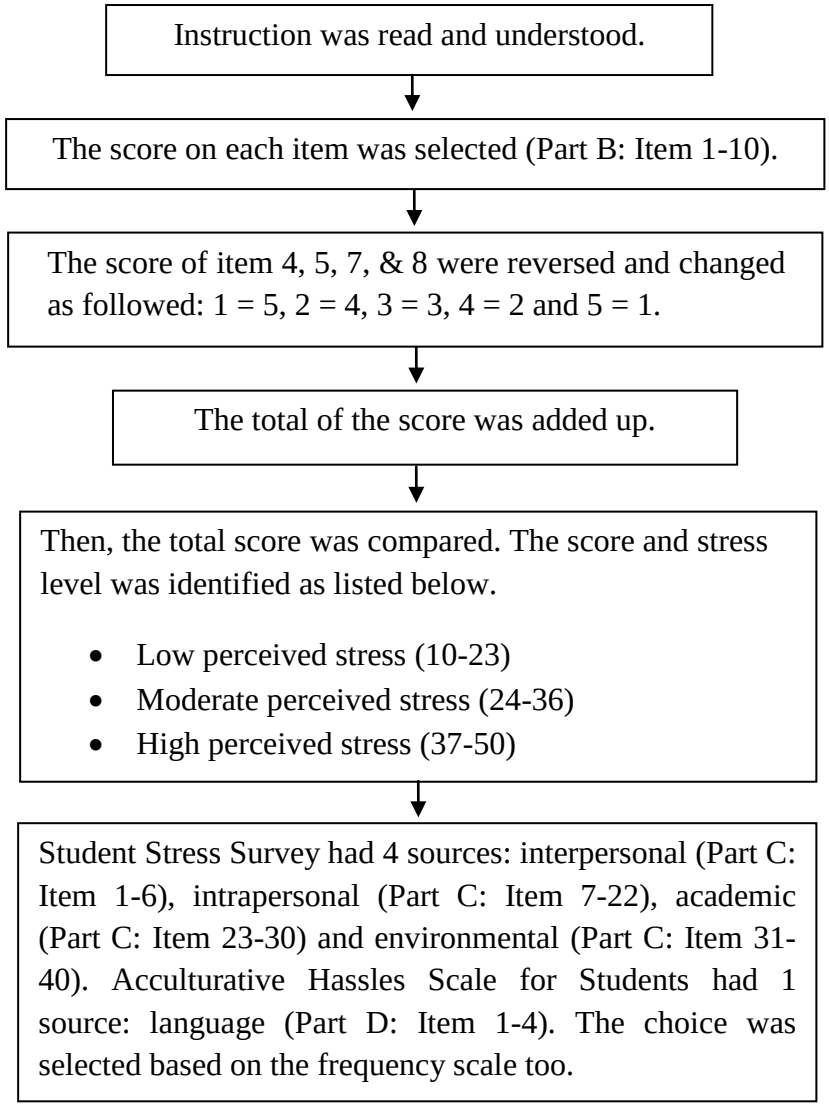

Figure 3.3 The methodology design of Perceived Stress Scale, Student Stress Survey and Acculturative Hassles Scale for Students

3.6 Sample Data

Questionnaires were adapted to collect the information. This method is more effective and faster than verbal surveys or interviews (Cavana et al., 2001). The questionnaires consisted of one demographic data (5 items) and three scales (54 items) with 59 items in total. Perceived Stress Scale, Acculturative Hassles Scale for Students and Student

Stress Survey had 10 items, 4 items and 40 items respectively (Cohen et al., 1983; Pan et al., 2010; Insel & Roth, 1985). There were 22000 students in UUM. Convenience sampling method was used and it was a non-probability sampling. The condition of proximate, accessible and available internet was the reason to choose this method. The sample size for this research was 377 students from various different backgrounds such as ethnicity, age, gender, year of study, faculty and education level (Sami et al., 2011; Md & Mariam, 2011; Krejcie & Morgan, 1970). The number of 337 respondents was further suggested by others statistician (Sekaran & Bougie, 2010). The survey forms were sent to the existing student mailing addresses until the true 377 respondents with no strange patterns and satisfied answers were received as required after the data inspection.

This study was carried out in February and March 2014 among the UUM students. The reason was due to the opening of new semester in February 2014. The date was set in conjunction with the purpose of the items in the survey. The items such as the changes of living condition and financial status were merely occurred at the starting semester. Students had to settle their hostel problems and pay the study fees that applicable to them. Their feelings and thoughts at those times might be different. The date should be set earlier in order to prevent the memories from being faded away. By doing so, this would create a more precise and accurate result as the student's feeling and thought was the major concern in this research.

3.7 Data Analysis

Data obtained were analyzed by using Statistical Packages for Social Science (SPSS) 20. The analysis comprised into two parts which were descriptive statistic and analytical statistic. In descriptive statistic, the mean value, standard deviation, percentage and number of frequency were measured for demographic data (general characteristic), independent variables (interpersonal, language, academic, intrapersonal and environment) and dependent variable (stress). For analytical statistic, the treatments of missing data and outliers were analysed to check for any invalid results. Next, Cronbach's alpha was used as the reliability analysis due to its popularity. It identifies the coefficient of reliability, consistency and correlation of survey items. The items of all variables (stress, interpersonal, language, academic, intrapersonal and environment) would be analysed. Its internal consistency together with the alpha value was shown in Table 3.1 (George & Mallery, 2003).

Table 3.1 Rules of thumb for the strength of Cronbach's alpha

Cronbach's Alpha	**Reliability**
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: George & Mallery (2003)

Factor analysis is functioning to reduce data in order to explain the total variances of total variables on why some of them are correlated to each other. Kaiser-Meyer-Olkin (KMO) and Bartlett's test were used as the adequacy and sphericity measurements (Pinsonneault & Kraemer, 1993). Secondly, scree plot was tested. It is functioning to determine the number of factor used in the research. The determinant is based on the sum of variance explained by a factor. It is a visual aid with a plot of eigenvalues as regarding to correlation matrix (Cattell, 1966). The exploratory factor analysis was used to explain the relationship among variables and their effects in factor analysis. Undoubtedly, not all the analysed items are developed locally and suitable for everything. Therefore, it was tested to help the researcher to check for the validity and reliability of every item in the study (Hair et al., 2010).

Pearson coefficient correlation test was used. It used to test the relationships between the independent variables (interpersonal, language, academic, intrapersonal and environment) and dependent variable (stress). The interpretation was shown in Table 3.2 (Hair et al., 2009). All the variables were compared with each other. By doing so, this will get a more precise analysis. Moreover, multiple regression analysis was used. It is a technique in statistic to test linear relationship among one dependent variable with several independent variables. It anticipates the coefficients of linear equation (Hair et al., 2009; Tabachnick & Fidell, 2001).

Table 3.2 Rules of thumb for the strength of correlation coefficients

Range of Coefficient	Description of Strength
±0.81 to ±1.00	Very strong
±0.61 to ±0.80	Strong
±0.41 to ±0.60	Moderate
±0.21 to ±0.40	Weak
±0.00 to ±0.20	Negligible or No Relationship

Source: Hair et al. (2009)

3.8 Chapter Summary

This chapter was composed to introduce the research design method and data collection for this research. The development of questionnaires in this study was referred from the research instruments as stated. The description for each research instruments was explained. The type of data analysis was stated with literatures given as the reasonable supports.

CHAPTER 4

RESULTS

4.0 Introduction

There are many consequence factors that induce to students' stress. In this study, it was divided into five sources and they were namely interpersonal sources, intrapersonal sources, environmental sources, academic sources and language sources. This research was carried out among students of UUM. The levels of student stress were identified from 377 UUM students randomly by using the convenience sampling method. The results were shown as follow:

I. Response analysis, missing data and outliers inspection.
II. Demographic data of respondents.
III. General data of Perceived Stress Scale and the stress levels of UUM students.
IV. General data of Student Stress Survey and Acculturative Hassles Scale for Chinese Students which were the sources (factors) of stress of the students.
V. Relationships between all the variables including interpersonal, language, academic, intrapersonal and environment with stress.

4.1 Response Rate

The respond rate for previous studies had ranged differently. There has no common respond rate for the studies of student stress. It was as high as 90% or as low as 4% (Dahlin et al., 2005; Oswalt & Riddock, 2007). In this research, the survey forms were distributed via online to the student's mails. There was 1100 questionnaires had been

sent out while the return rate was 35% or 385 students. Ultimately, the results of 377 students were selected after the deletion of 8 duplicate records. The mistake was done by respondents whereby it could create ungenuine results (Tabachnick & Fidell, 2001; Dancey & Reidy, 2004; Elmagarmid et al., 2007). The respond rate was supported with the other studies that also had the respond rates within the range of 46% - 27% (Soliman, 2014; Grava-Gubins & Scott, 2008; Wong et al., 2006).

4.2 Data Screening Procedure

The process of data screening is important to check for the errors in data set. This is because researcher can simply create mistake without notice during the data entering. Those errors done may directly affect the analysis and mess the research up (Cavana et al., 2001). The common steps in this process were error checking of data file, error finding and data correction of data set (Pallant, 2005). In this study, the missing data and outliers were analysed.

4.2.1 Treatment of Missing Data

The inspection of missing data was shown in Appendix B. As mentioned, there was no missing data in this research. This is because the survey was done in online method. The online survey was designed to let the respondents to answer all the questionnaires in order to proceed over or submit the survey. The benefit is that it will automatically detect and avoid any missing data. Statisticians suggested that it is wiser to omit those cases if there are plenty of missing data (Hair et al., 2010).

4.2.2 Checking for Outliers

Outlier is a point that lies far apart from other points. Normally, it shows the error of data in the results (Jarrell, 1994). The results of outlier's assessment were shown in Appendix C. The stem and leaf plot and box plot showed that there was no extreme value. It would mean no outlier. In some studies, the outliers might due to the dishonest responses that caused the invalid points. Outliers would inflate the results if they were not deleted (Osborne & Overbay, 2004; Orr et al., 1991). Therefore, the outliers were deleted. This is because outliers can bring impact to statistical analysis and decrease the result's performance (Zimmerman, 1994).

4.3 Profiles of the Respondents

The results of data were shown in Appendix D and they consisted of demographic data of respondents, perceived stress scale, student stress survey and acculturative hassles scale for students. All the results of statistical analysis could be found in Appendix C, Appendix D, Appendix E and Appendix F.

4.3.1 Demographic Data

The complete results of demographic data were shown in Appendix D. Table 4.1 shows the percentage values for all the profiles of students. Gender was divided into 2 groups which were male and female. The total number of respondents for gender was recorded at 377. For the male group, 33% or 126 students were recorded. Whereas there were 67% or 251 students recorded for the female group.

Ethnicity was divided into 4 groups which were Malay, Chinese, Indian and others. The total number of respondents for ethnicity was recorded at 377. For the Malay group, 50% or 187 students were recorded and it has the most respondents. The second was Chinese group which was recorded with 47% or 179 students. The third was Indian group which was recorded with 2% or 6 students. Whereas the fewest respondents were 1% or 5 students recorded for the others group.

Age was divided into 4 groups which were ≤ 20 years old, 21-30 years old, 31-40 years old and ≥ 41 years old. The total number of respondents for age was recorded at 377. For the 21-30 years old group, 87% or 327 students were recorded and it has the most respondents. The second was ≤ 20 years old group which was recorded with 6% or 24 students. The third was 31-40 years old group which was recorded with 5% or 18 students. Whereas the fewest respondents were 2% or 8 students recorded for the ≥ 41 years old group.

Level of education was divided into 4 groups which were diploma, bachelor's degree, master's degree and phd. The total number of respondents for level of education was recorded at 377. For the bachelor's degree group, 82% or 311 students were recorded and it has the most respondents. The second was master's degree group which was recorded with 14% or 52 students. The third was phd group which was recorded with 2% or 8 students. Whereas the fewest respondents were 2% or 6 students recorded for the diploma group.

Year of study was divided into 4 groups which were first year, second year, third year and fourth year and above. The total number of respondents for level of education was recorded at 377. For the group of second year, 40% or 149 students were recorded and it has the most respondents. The second was the group of third year, which was recorded with 36% or 137 students. The third was the group of fourth year and above, which was recorded with 12% or 47 students. Whereas the fewest respondents were 12% or 44 students recorded for the group of fourth year and above.

Table 4.1 Demographic data

Variables	Frequency	Percentage (%)
Gender (n=377)		
Male	126	33.4
Female	251	66.6
Ethnicity (n=377)		
Chinese	179	47.5
Malay	187	49.6
Indian	6	1.6
Others	5	1.3
Age (n=377)		
≤ 20 years old	24	6.4
21-30 years old	327	86.7
31-40 years old	18	4.8
≥ 41 years old	8	2.1
Level of Education (n=377)		
Diploma	6	1.6
Bachelor's degree	311	82.5
Master's degree	52	13.8
Phd.	8	2.1
Year of Study (n=377)		
First year	44	11.7
Second year	149	39.5
Third year	137	36.3
Fourth year and above	47	12.5

4.3.2 Perceived Stress Scale

There were 10 items in Perceived Stress Scale and 5 scales for each item. All were labeled with S1-S10 respectively. The complete results of mean and standard deviation were shown in Appendix D: Table 6. Table 4.2 exhibits the analysis of stress variable. Total number of respondents was recorded at 377 for each item. Basically, the values of mean and standard deviation for all items were ranging positively. S3 had the highest mean value. It was the most influential item and overlooking others with the mean value of 3.79. Meanwhile, the standard deviation of S9 was 0.882. It was the highest. In contrast, S5 had the lowest weight with only 3.06 for its mean. The lowest standard deviation value was S7. The value was recorded as 0.671. In general, the average mean for stress was 3.30.

Table 4.2 Perceived stress scale (PSS): Stress (S)

Items	Mean	Standard Deviation
S1	3.35	0.812
S2	3.25	0.842
S3	3.79	0.882
S4	3.15	0.849
S5	3.06	0.776
S6	3.17	0.804
S7	3.36	0.671
S8	3.42	0.680
S9	3.26	0.927
S10	3.19	0.853
Average S	3.30	0.520

4.3.3 Student Stress Survey

There were 40 items in Student Stress Survey and 5 scales option for each item. All were labeled with respective symbols. The complete results of mean and standard deviation were shown in Appendix D: Table 7, Table 8, Table 9 and Table 10. In the tables, all the items basically were divided into 4 sources which were interpersonal sources, intrapersonal sources, academic sources and environmental sources. For the interpersonal sources (IP1-IP6), there were 6 items in total. The Table 4.3 exhibits the analysis of interpersonal variable. Total number of respondents was recorded at 377 for each item. Basically, the values of mean and standard deviation for all items were ranging positively. IP4 had the highest mean values. It was the most influential item with the mean value of 3.24. Meanwhile, the highest standard deviation value was IP6 with 0.895. In contrast, IP6 had the lowest weight with only 2.99 for its mean. IP1 was recorded as the lowest standard deviation with the value of 0.655. In general, the average mean for interpersonal source was 3.14.

Table 4.3 Student stress survey (SSS): Interpersonal sources (IP)

Items	Mean	Standard Deviation
IP1	3.15	0.655
IP2	3.18	0.759
IP3	3.23	0.749
IP4	3.24	0.810
IP5	3.05	0.888
IP6	2.99	0.895
Average IP	3.14	0.656

For the intrapersonal sources (IRP1-IRP16), there were 16 items in total. The Table 4.4 exhibits the analysis of intrapersonal variable. Total number of respondents was recorded at 377 for each item. Basically, the values of mean and standard deviation for all items were ranging positively. IRP10 had the highest mean values. It was the most influential item with the mean value of 3.97. Meanwhile, the highest standard deviation value was IRP13 with 1.249. In contrast, IRP15 had the lowest weight with only 1.98 for its mean. IRP9 was recorded as the lowest standard deviation with the value of 0.754. In general, the average mean for intrapersonal source was 3.14.

Table 4.4 Student stress survey (SSS): Intrapersonal sources (IRP)

Items	Mean	Standard Deviation
IRP1	3.55	0.760
IRP2	3.41	0.804
IRP3	3.25	0.811
IRP4	3.17	0.836
IRP5	3.47	0.881
IRP6	3.35	0.905
IRP7	3.50	0.755
IRP8	2.09	0.979
IRP9	3.33	0.754
IRP10	3.97	0.771
IRP11	3.45	0.907
IRP12	3.10	0.875
IRP13	2.12	1.249
IRP14	2.11	0.961

Table 4.4 Student stress survey (SSS): Intrapersonal sources (IRP) (continued)

Items	Mean	Standard Deviation
IRP15	1.98	0.909
IRP16	3.14	0.879
Average IRP	3.06	0.537

For the academic sources (A1-A8), there were 8 items in total. The Table 4.5 exhibits the analysis of academic variable. Total number of respondents was recorded at 377 for each item. Basically, the values of mean and standard deviation for all items were ranging positively. A1 had the highest mean values. It was the most influential item with the mean value of 3.75. Meanwhile, the highest standard deviation value was A3 with 0.937. In contrast, A5 had the lowest weight with only 2.34 for its mean. A8 was recorded as the lowest standard deviation with the value of 0.760. In general, the average mean for academic source was 3.16.

Table 4.5 Student stress survey (SSS): Academic sources (A)

Items	Mean	Standard Deviation
A1	3.75	0.804
A2	3.71	0.850
A3	3.13	0.937
A4	3.47	0.866
A5	2.34	0.858
A6	3.71	0.877
A7	2.60	0.775
A8	2.59	0.760
Average A	3.16	0.645

For the environmental sources (E1-E10), there were 10 items in total. The Table 4.6 exhibits the analysis of environmental variable. Total number of respondents was recorded at 377 for each item. Basically, the values of mean and standard deviation for all items were ranging positively. E1 had the highest mean values. It was the most influential item with the mean value of 3.45. Meanwhile, the highest standard deviation value was E9 with 1.185. In contrast, E9 had the lowest weight with only 2.11 for its mean. E10 was recorded as the lowest standard deviation with the value of 0.711. In general, the average mean for environmental source was 3.00.

Table 4.6 Student stress survey (SSS): Environmental sources (E)

Items	Mean	Standard Deviation
E1	3.45	0.865
E2	3.29	0.877
E3	3.24	0.795
E4	3.33	0.775
E5	2.50	0.806
E6	2.78	1.009
E7	3.43	0.715
E8	3.40	0.864
E9	2.11	1.185
E10	2.47	0.711
Average E	3.00	0.530

4.3.4 Acculturative Hassles Scale for Students

There were 4 items which were related to language sources in Acculturative Hassles Scale for Students and 5 scales for each item. All were labeled with L1-L4 respectively. The complete results were shown in Appendix D: Table 11. It is a specific measurement to find the stress sources of language. For the language sources (L1-L4), there were 4 items in total. The Table 4.7 exhibits the analysis of language variable. Total number of respondents was recorded at 377 for each item. Basically, the values of mean and standard deviation for all items were ranging positively. L2 had the highest mean values. It was the most influential item with the mean value of 3.58. Meanwhile, the highest standard deviation value was L1 with 0.827. In contrast, L3 had the lowest weight with only 3.50 for its mean. L3 was recorded as the lowest standard deviation with the value of 0.769. In general, the average mean for environmental source was 3.55.

Table 4.7 Acculturative hassles scale for students (AHSS): Language sources (L)

Items	Mean	Standard Deviation
L1	3.56	0.827
L2	3.58	0.816
L3	3.50	0.769
L4	3.56	0.824
Average L	3.55	0.705

4.4 Reliability Analysis

The reliability test for stress variable was shown in Appendix E: Table 1. The Cronbach's alpha coefficient was 0.84 and it was good since it was above 0.8 (George & Mallery, 2003). It signified the internal consistency of the 10 items in stress variable test was reliable. The reliability test for interpersonal variable was shown in Appendix E: Table 5. The Cronbach's alpha coefficient was 0.905 and it was excellent since it was above 0.9 (George & Mallery, 2003). It signified the internal consistency of the 6 items in interpersonal variable test was reliable. The reliability test for intrapersonal variable was shown in Appendix E: Table 9. The Cronbach's alpha coefficient was 0.886 and it had a good reliability (George & Mallery, 2003). It signified the internal consistency of the 16 items in intrapersonal variable test was reliable.

The reliability test for academic variable was shown in Appendix E: Table 13. The Cronbach's alpha coefficient was 0.899 and it was good since it was ranged $0.8 \leq \alpha < 0.9$ (George & Mallery, 2003). It signified the internal consistency of the 8 items was reliable. The reliability test for environment variable was shown in Appendix E: Table 17. The Cronbach's alpha coefficient was 0.811 and it was as good since it was ranged $0.8 \leq \alpha < 0.9$ (George & Mallery, 2003). Same as academic variable, all its items were reliable. The reliability test for language variable was shown in Appendix E: Table 21. The Cronbach's alpha coefficient was 0.894 and it was as good as academic's reliability (George & Mallery, 2003). It signified the internal consistency of the 4 items in language variable test was reliable. Table 4.8 summaries all the alpha values of tested variables.

Table 4.8 Reliability test

Variable	Cronbach's Alpha
Stress	0.840
Interpersonal	0.905
Intrapersonal	0.886
Academic	0.899
Environment	0.811
Language	0.894

4.5 Factor Analysis

Factor analysis is a test for data reduction by grouping the similar variables into one factor. Therefore, it analyses the items in order to produce lesser factors from a large number of factors (Cattell, 1966). In this study, the complete results of factor analysis were shown in Appendix F. In factor analysis, it was divided into Kaiser-Meyer-Olkin (KMO) and Bartlett's test, scree plot and exploratory factor analysis.

4.5.1 Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

The Bartlett's test of sphericity is testing the null hypothesis in which correlation matrix has no difference with identity matrix. It is significant for the factor analysis to be considered appropriate when $p < 0.05$. It also means not to accept null hypothesis here (Bartlett et al., 2001). Additionally, the measurement of Kaiser-Meyer-Olkin (KMO) for sampling has the adequacy index ranges from 0 to 1. The value of 0.5 is suggested as the minimum value for a factor analysis while 0.7 and above is the good

factor analysis (Kaiser, 1974). From the Table 4.9, the result indicates the factor analysis was appropriate since the value of Kaiser-Meyer-Olkin (KMO) was 0.948. The statistical analysis for Bartlett test of sphericity was significant ($p < 0.05$).

Table 4.9 Kaiser-Meyer-Olkin (KMO) and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.948
Bartlett's Test of Sphericity	Approx. Chi-Square	22491.19
	df	1431
	Sig.	0.000

4.5.2 Scree Plot

In scree plot, a variance by large percent is implicating an influential factor. It is showing an orderly descending pattern with the factor number. The factor number to keep is determined when the line starts to level off (Tabachnick & Fidell, 2001). Figure 4.1 is showing the scree plot of all items and 2 factors were proposed for this research. At first, scree plot showed a steep slope pictorially. Then, the line was started to level off at the second point and third point. That was also the break point to determine for the retainable factor number (Costello & Osborne, 2005; Cattell, 1966). While Kaiser's stopping rules stated that eigenvalues at least 1 is remained as one factor (Kaiser, 1960). It is very subjective and questionable in deciding which method to be used (Costello & Osborne, 2005). But yet, the truth of scree plot would turn to be a reference as opposed to be a decisive factor for this study (O'Connor, 2000).

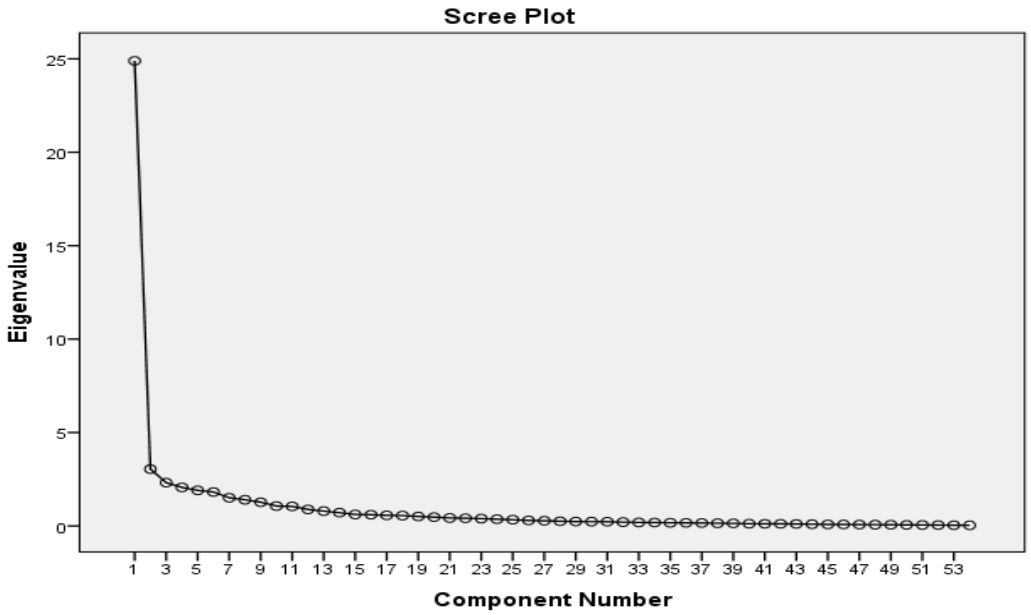

Figure 4.1 Scree plot measurement of student stress

4.5.3 Exploratory Factor Analysis

The importance of exploratory factory analysis is to analyse the interrelationships between original items and factors before an assumption makes. The value shown is namely factor loading which is the coefficient of pattern or factor design. It is showing the correlation percentage of item to a variable in an equation. It interprets the fundamental nature of certain factor (Tabachnick & Fidell, 2001). The rule of thumb for the minimum loading is recommended at 0.50 (Hair et al., 2010). Meanwhile the communality of each item is calculated by adding the squared factor loading in particular pattern. It is the variance to an item as explained by a variable. For communality, the higher it is, the higher reliability, the better the item (Cortina, 1993). As recommended, 0.40 is the minimum value to cut off. However, a low communality does not mean to be a poor or unfit item. Communality below 0.40 means that item is less related to the other items. It just has less correlation to the suggested factor

(Costello & Osborne, 2005). The complete values of communality and loading factor for the items were shown in the table form as followed.

In Table 4.10, the factor loadings for all the items were above the cut off threshold. S1 had the lowest loading which was 0.544 whereas S8 was the highest factor loading with the result of 0.852. Based on S8, the coefficient of 0.852 meant 85.2% of S8 could only be tested for the student stress while 14.8% of S8 was remained to have no relationship with student stress. For communality, there was no items lower than 0.40. The lowest communality was recorded as 0.452 by S1 while the highest communality was recorded as 0.935 by S2. Based on S2, 0.935 was its variance. Student stress was accounted for 93.5% of variance by the original S8.

Table 4.10 Factor analysis results for stress

Items	**Loading**	**Communality**	**Cronbach Alpha**
S1	0.544	0.452	0.840
S2	0.654	0.935	
S3	0.567	0.551	
S4	0.748	0.907	
S5	0.712	0.650	
S6	0.580	0.454	
S7	0.833	0.848	
S8	0.852	0.923	
S9	0.614	0.590	
S10	0.608	0.560	

In Table 4.11, the factor loadings for all the items were above the cut off threshold. IP3 had the lowest loading which was 0.593 whereas IP5 was the highest factor loading with the result of 0.747. For communality, there was no items lower than 0.40. The lowest communality was recorded as 0.706 by IP1 while the highest communality was recorded as 0.835 by IP2.

Table 4.11 Factor analysis results for interpersonal

Items	Loading	Communality	Cronbach Alpha
IP1	0.631	0.706	0.905
IP2	0.683	0.835	
IP3	0.593	0.824	
IP4	0.625	0.822	
IP5	0.747	0.803	
IP6	0.637	0.833	

In Table 4.12, the factor loadings for all the items were above the cut off threshold. IRP10 had the lowest loading which was 0.562 whereas IRP15 was the highest factor loading with the result of 0.974. For communality, there was no items lower than 0.40. The lowest communality was recorded as 0.595 by IRP10 while the highest communality was recorded as 0.963 by IRP15.

Table 4.12 Factor analysis results for intrapersonal

Items	Loading	Communality	Cronbach Alpha
IRP1	0.715	0.763	0.886
IRP2	0.698	0.730	
IRP3	0.678	0.818	
IRP4	0.629	0.812	
IRP5	0.580	0.718	
IRP6	0.694	0.873	
IRP7	0.709	0.742	
IRP8	0.946	0.907	
IRP9	0.571	0.732	
IRP10	0.562	0.595	
IRP11	0.683	0.904	
IRP12	0.706	0.713	
IRP13	0.892	0.896	
IRP14	0.942	0.904	
IRP15	0.974	0.963	
IRP16	0.586	0.745	

In Table 4.13, the factor loadings for all the items were above the cut off threshold. A2 had the lowest loading which was 0.559 whereas A7 was the highest factor loading with the result of 0.756. For communality, there was no items lower than 0.40. The lowest communality was recorded as 0.636 by A2 while the highest communality was recorded as 0.926 by A5.

Table 4.13 Factor analysis results for academic

Items	Loading	Communality	Cronbach Alpha
A1	0.649	0.670	0.899
A2	0.559	0.636	
A3	0.628	0.769	
A4	0.649	0.907	
A5	0.644	0.926	
A6	0.664	0.649	
A7	0.756	0.787	
A8	0.745	0.793	

In Table 4.14, the factor loadings for all the items were above the cut off threshold. E8 had the lowest loading which was 0.593 whereas E9 was the highest factor loading with the result of 0.867. For communality, there was no items lower than 0.40. The lowest communality was recorded as 0.772 by E8 while the highest communality was recorded as 0.919 by E10.

Table 4.14 Factor analysis results for environment

Items	Loading	Communality	Cronbach Alpha
E1	0.630	0.866	0.811
E2	0.718	0.894	
E3	0.665	0.787	
E4	0.706	0.857	

Table 4.14 Factor analysis results for environment (continued)

Items	Loading	Communality	Cronbach Alpha
E5	0.842	0.871	
E6	0.685	0.874	
E7	0.831	0.882	
E8	0.593	0.772	
E9	0.867	0.887	
E10	0.839	0.919	

In Table 4.15, the factor loadings for all the items were above the cut off threshold. L3 had the lowest loading which was 0.727 whereas L4 was the highest factor loading with the result of 0.795. For communality, there was no items lower than 0.40. The lowest communality was recorded as 0.708 by L3 while the highest communality was recorded as 0.804 by L4.

Table 4.15 Factor analysis results for language

Items	Loading	Communality	Cronbach Alpha
L1	0.766	0.773	0.894
L2	0.791	0.790	
L3	0.727	0.708	
L4	0.795	0.804	

4.6 Correlation Analysis

The Pearson coefficient correlation analysis showed that there was a significant relationship between the stress with interpersonal, intrapersonal, academic, environment and language. There was a very strong positive linear correlation between stress and interpersonal ($r = 0.901$, $p < 0.05$), intrapersonal ($r = 0.857$, $p < 0.05$), academic ($r = 0.918$, $p < 0.05$) and environment ($r = 0.846$, $p < 0.05$). And, there was a moderate positive linear correlation between stress and language ($r = 0.568$, $p < 0.05$) in this study.

The Pearson coefficient correlation analysis showed that there was a significant relationship between the interpersonal with intrapersonal, academic, environment and language. There was a very strong positive linear correlation between interpersonal and intrapersonal ($r = 0.889$, $p < 0.05$), academic ($r = 0.883$, $p < 0.05$) and environment ($r = 0.861$, $p < 0.05$). There was a moderate positive linear correlation between interpersonal with language ($r = 0.581$, $p < 0.05$) in this study.

The Pearson coefficient correlation analysis showed that there was a significant relationship between the intrapersonal with academic, environment and language. There was a very strong positive linear correlation between interpersonal and academic ($r = 0.868$, $p < 0.05$) and environment ($r = 0.820$, $p < 0.05$). There was a moderate positive linear correlation between intrapersonal with language ($r = 0.598$, $p < 0.05$) in this study.

The Pearson coefficient correlation analysis showed that there was a significant relationship between the academic with environment and language. There was a very strong positive linear correlation between academic and environment ($r = 0.846$, $p < 0.05$). There was a moderate positive linear correlation between academic with language ($r = 0.571$, $p < 0.05$) in this study. Based on the analysis, environmental variable had shown a significant relationship with language. It was a moderate positive linear correlation between them ($r = 0.487$, $p < 0.05$) in this study. The Table 4.16 is the result of Pearson coefficient correlation test.

Table 4.16 The Pearson coefficient correlation test

		S	**IP**	**IRP**	**A**	**E**	**L**
Stress (S)	r	1	0.901**	0.857**	0.918**	0.846**	0.568**
	p		0.000	0.000	0.000	0.000	0.000
Interpersonal (IP)	r	0.901**	1	0.889**	0.883**	0.861**	0.581**
	p	0.000		0.000	0.000	0.000	0.000
Intrapersonal (IRP)	r	0.857**	0.889**	1	0.868**	0.820**	0.598**
	p	0.000	0.000		0.000	0.000	0.000
Academic (A)	r	0.918**	0.883**	0.868**	1	0.846**	0.571**
	p	0.000	0.000	0.000		0.000	0.000
Environment (E)	r	0.846**	0.861**	0.820**	0.846**	1	0.487**
	p	0.000	0.000	0.000	0.000		0.000
Language (L)	r	0.568**	0.581**	0.598**	0.571**	0.487**	1
	p	0.000	0.000	0.000	0.000	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).

4.7 Multiple Regression Analysis

The model summary of multiple regression analysis for this research was shown in Appendix H: Table 2. From Table 4.17, the value of adjusted R^2 was 0.881. The independent variables (interpersonal, intrapersonal, academic, environment and language) were only explaining 88% of the changes in stress (dependent variable) as tested in the model. That is, it had only 88% of influences to the dependent variable (stress).

The complete coefficient table of each independent variable for this research was shown in Appendix H: Table 4. From the Table 4.17, the value of coefficient was represented by beta. The beta value for interpersonal was 0.328. The change of every unit in stress would lead to 0.33 point changing in interpersonal. It had the second highest influencing degree between the independent variables. It was significant ($p < 0.05$). For intrapersonal, the beta value was 0.036. The change of every unit in stress would lead to an increase of 0.04 point in interpersonal. Since it was not significant ($p = 0.403$), it caused a minor impact to stress.

For academic, the beta value was 0.498. The change of 1 unit in stress would lead to a point of 0.5 of change in academic. It had the highest influencing degree between the independent variables. It was significant ($p < 0.05$) in the 0.05 significance value. For environment, the beta value was 0.102. 1 unit of increase in stress would lead to 0.1 of changes in environment. It had the third highest influencing degree between the independent variables. It was significant ($p = 0.008$) in the 0.05 significance value.

For language, the beta value was 0.022. The change of 1 unit in stress would lead to 0.02 point of change in language. It had the lowest impact to stress between the independent variables. It was not significant ($p < 0.05$).

Table 4.17 Multiple regression analysis

Model			**Unstandardized Coefficients**		**Standardized Coefficients**		
	R^2	**Adjusted R^2**	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.882	0.881	0.747	0.062		11.971	0.000
Interpersonal			0.260	0.038	0.328	6.834	0.000
Intrapersonal			0.035	0.042	0.036	0.837	0.403
Academic			0.402	0.035	0.498	11.490	0.000
Environment			0.100	0.037	0.102	2.678	0.008
Language			0.016	0.017	0.022	0.954	0.341

The hypothesis of H2 and H5 were rejected. There were not enough evidences to support the claims that student affected by stress was associated with intrapersonal and language sources. The hypothesis of H1, H3 and H4 were accepted. There were enough evidences to support the claims that student affected by stress was associated with interpersonal, academic and environmental sources. Table 4.18 has summarised the status of hypothesis testing for this research.

Table 4.18 Summary of the hypothesis testing

	Hypothesis	Status
H1	Student affected by stress is significantly associated with interpersonal.	Accepted
H2	Student affected by stress is significantly associated with intrapersonal.	Rejected
H3	Student affected by stress is significantly associated with academic.	Accepted
H4	Student affected by stress is significantly associated with environment.	Accepted
H5	Student affected by stress is significantly associated with language.	Rejected

4.8 Student Stress Status

All the student stress levels obtained were used to compare with the standard of PSS. They were totaled up manually based on the values that were answered to the 10 items (S1-S10). Table 4.19 showed the prevalence rate of UUM student stress. The total number of respondents was recorded at 377. Based on the table, a majority of 71.3% or 269 students was prone to moderate stress. Whereas there was merely 4.0% or 15 students were indicating with low stress. For the high stress level, there was 24.7% or 93 students were recorded. The mean value was 33.0 which also indicated a moderate stress status for the UUM students. The standard deviation was 5.21.

Table 4.19 Prevalence rate of student stress

Stress Level (n = 377)	Frequency	Percentage (%)	Mean	Standard Deviation
Low stress (10-23)	15	4.0	33.0	5.21
Moderate stress (24-36)	269	71.3		
High stress (37-50)	93	24.7		

4.9 Chapter Summary

This chapter had described the consequences of the entire feedbacks of UUM students. The results generated from questionnaires were then checking with missing data and outlier tests. The outcomes were further explained by using the reliability test, factor analysis, Pearson correlation test and multiple regression analysis. Within the 5 hypotheses made earlier, 3 were accepted and 2 were rejected. To conclude, interpersonal, academic and environment were the significant sources to influence student stress. All were positively affecting the student stress. However, intrapersonal and language variables were rejected as insignificant. Some findings were in used to support the results made.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.0 Introduction

The last chapter of this research was mainly discussed about the findings and summarized the whole view of students stress. It was separated into discussion, conclusion and limitation and recommendation for further research under this part. Discussion was discussed about the outcomes of the analysis with the support from other researches. Conclusion was describing the finalized result after a range of empirical statistics done. Limitation and recommendation was stating the weakness of this research and suggesting the new method to be done for further research.

5.1 Discussion

This study was a cross-sectional research that was analysed on a group of 377 UUM students. The objective was to determine the associations of student stress with the stress sources. In prolongation to this, it was extended indirectly to find out the students stress status and their stress sources. This present study had showed that the majority students of UUM were under moderate stress. The factors such as demographic characteristic of one person can lead to different changes in stress level. The general one can be age and generation, gender, educational level, ethnicity, types of course taken and so on (Poyrazli et al., 2004). For instance, based on the previous studies, most of them found that gender played to influence the students' stress. Female students had the higher stress problem than male students (Dahlin, 2007;

Shaikh et al., 2004). However, a study done on international students showed differently. The male students had a higher stress than female students (Carballo, 1994; Berry, 1997; Mori, 2000). In term of age, quite a large number of UUM students were coming from the age of 21-30 years old. Past research indicated they were risky with the transitional process of an environment to a new environment particularly for young students (Elias et al., 2011).

Under the data screening, treatment of missing data and checking for outliers were done. Both tests indicated no missing data and outliers. Generally, results with missing data will be taken out and excluded in the statistical analysis to avoid the disturbance of bad data (Upton & Cook, 2006). Also, the deletion of outlier can increase the performance of data made (Zimmerman, 1994).

As mentioned earlier, the result of Kaiser-Meyer-Olkin (KMO) test in this study was 0.948. The value was close to 1 and the sampling was sufficient to fit the adequacy (Kaiser, 1974). Bartlett's test was used to reject the null hypothesis in this study. The correlation matrix of this study shall show differently from identity matrix. This is because a correlation matrix will definitely do not have 1 for its diagonal numbers and 0 for its off diagonal numbers (Bartlett et al., 2001). The Bartlett test of sphericity was significant ($p < 0.05$) in this study. These 2 tests normally work as a minimum requirement for a research to go beyond the next analysis stage (Field, 2009).

Scree plot has y-axis and x-axis just like a graph. Y-axis represents the eigenvalues while x-axis represents the amount of factor. It is illustrating the total variance of data proportionally. So, the line is always curved down. Based on the background of factor analysis, scree plot uses to analyse the number of significant factors (Cattell, 1966). Graphically, the number of factor is going to preserve when a line with a sharp decline ends before the point is touching down to form the 'elbow' shape (Costello & Osborne, 2005). However, another method determines the number of factor with the eigenvalues at least 1 as the cut off value. This is because the most important factor will be listed at first. Value of 1 is the mean of eigenvalues to be a single variable (Kaiser, 1960). Unfortunately, both methods do not always produce the same result. There is very subjective to apply with both methods which in turn to make the scree plot to be questionable (Costello & Osborne, 2005). Consequently, scree plot is just an important reference in suggesting the number of factor rather than setting the number of factor in this study (O'Connor, 2000).

In the factor analysis of stress variable, all the factor loadings loaded above 0.50. The best item to well describe this variable was S8 (factor loading = 0.852) which was "how often have students felt that they were on top of things?" Previous study had indicated students were stressful since they always did not handle with their personal things well (Williams et al., 2005). Besides that, all the items in interpersonal variable were loaded above 0.50. The highest factor loading was recorded by IP5 (0.747) which was "fighting with friend." The conflicts such as fighting and quarrel were due to the bad relationship among friends. Such event had cause to student stress (Cardwell, 2009). Also, intrapersonal variable did not have factor loading loaded

below 0.50. The highest factor loading was recorded by IRP15 (0.974) which was "dead of a friend." A study showed that most of the stressors were the uncommon life events. The death of pet, friend or family member was unlikely to happen. This factor had been proven to have a significant cause to everyone (Cardwell, 2009).

Likewise, all the factor loadings loaded above 0.50 in academic variable. The best item to well describe this variable was A7 (0.756) which was "serious argument with instructor." Action on argue with lecturer is an offence done by students. The guilt of one student will be recorded by the school authorities. Student feels uncomfortable and stress will start to arise from there. Previous studies showed that students' feeling had the tendency to affect the academic performance (Smith & Renk, 2007; Pomerantz et al., 2002). Apart from that, all the factor loadings loaded above 0.50 in environmental variable. The highest factor loading was recorded by E9 (0.867) which was "quit job." A study found that part-time students were prone to stress probably from the matter of job, family or study (Sahari et al., 2012). Besides, all the items in language variable were loaded above 0.50 too. The highest factor loading was recorded by L4 (0.795) which was "I do not have a sufficient English vocabulary." Some researches showed that English was directly influencing the stress level of university student (Imberti, 2007; Harvey et al., 2006).

Interpersonal stress occurred among people. The social activities and relationships were commonly faced by the university freshmen (Burns et al., 2002). It had Cronbach's alpha of 0.905. And, it showed the significant and correlated relationship

with intrapersonal ($r = 0.889$, $p < 0.05$), academic ($r = 0.883$, $p < 0.05$), environment ($r = 0.861$, $p < 0.05$) and language ($r = 0.581$, $p < 0.05$). Previous study indicated interpersonal stress was related with poor social skill by the students (Darling et al., 2007). Students were under pressures when they were managing or discussing the works with friends. They were hardly to handle their social network with their parents, relatives and friends (Ahern & Norris, 2011).

Intrapersonal stress occurred in one person alone. It had Cronbach's alpha of 0.886. And, it showed the significant and correlated relationship with academic ($r = 0.868$, $p < 0.05$), environment ($r = 0.820$, $p < 0.05$) and language ($r = 0.598$, $p < 0.05$). A study found out students suffered from intrapersonal stress in the perceived discrimination (Sandhu, 1994). Notably, it also meant the students felt suffering since they could not manage the strangeness and thus assumed it as the social discrimination (Bois, 1956). Self efficacy of a person could determine the level of intrapersonal stress too. A high efficacy student carried a task faster. This type of students had the willingness to face challenge. They did not feel depression easily and would try to overcome it. Therefore, the stress was noted to be lower (Bandura 1986; Schwarzer & Jerusalem, 1992; Poyrazli et al., 2002).

Academic had Cronbach's alpha of 0.899. And, it showed the significant and correlated relationship with environment ($r = 0.846$, $p < 0.05$) and language ($r = 0.571$, $p < 0.05$). Most of the students stressed out with assignments and examinations (Khadijah et al., 2013). The stress of academic could cause illness to some students.

Stomach pain and nausea were the common symptoms for the early stage. A previous study indicated the anxiety was associated with exams and assignments (Khadijah et al., 2013). This implied the physiological and emotional reactions were the main influences. Due to this, it would affect the students in academic performance. The fear of academic failure would further increase the stress of one student (Abouserie, 1994; Gadsella et al., 1998; Wang et al., 2007).

The environmental stress of students was affected by the low satisfaction of university environment. It had Cronbach's alpha of 0.811. And, it showed the significant and correlated relationship with language ($r = 0.487$, $p < 0.05$). A good and clean environment is very important in playing its role to affect daily activities of students (Chan & Koh, 2007). For instance, students need a clean place for recreation and a well maintained sport complex for relaxation. A polluted and noisy cum crowded environment will just increase the emotional reaction. It is even worse when the environment is disturbing the sleeping and eating periods of students (Gan et al., 2011; Sahari et al., 2012).

Language is used for communication. Yet, it can cause stress to students in term of cultural distance. It had Cronbach's alpha of 0.894. And, it was significant and moderately associated with the other variables as stated above. Many researches done and noted that Asian students were relatively weak in speaking English due to the insufficient English proficiency (Poyrazli et al., 2004). Generally, children in Malaysia begin to learn English when young. Singular noun of English is started to

teach in kindergarten. However, English is not the major language and its usage is comparatively lower than the other languages. Students found to be hardly proficient in English after years of study in school (Chiu & Ring, 1998). Furthermore, the English level is increasing with the education level especially in university. The higher English's vocabulary, grammar and writing was applied everywhere in university (Liu, 2009). Students who lacked of English proficiency were hardly to understand all. The stress arose when there was a drop in their academic performance, unable to communicate well, reduction in learning opportunities and so on (Constantine et al., 2004; Kuo & Roysircar, 2004; Mori, 2000; Yeh & Inose, 2002).

In regression analysis, 3 variables were tested to be the significant predictors for students stress while 2 variables were rejected. They were interpersonal, academic and environmental variables. Hypothesis of H1, H3 and H4 was accepted. Similar study found that student stress was significantly influenced by interpersonal sources (Ying et al., 2007). In line with this, a bad social skill would highly bring out the impact to adolescent's friendship (Burns et al., 2002). Apart from that, this research indicated student stress was significantly influenced by academic sources like other study (Liew & Muhamad, 2013). Environmental sources were significantly associating with student stress. As mentioned in a study, environment was the significant factor to affect student stress level for Naiemeh students (Seyedfatemi et al., 2007). On the other hand, intrapersonal and language variables were not significantly influencing student stress. Previous studies had showed the same evidences to conclude intrapersonal and language variables were insignificant differences to stress (Williams et al., 2005; Li et al., 2010). Any research related with human behaviour or

psychology may cause a low R^2 value. This is because human is harder to predict (Bedeian & Mossholder, 1994). From the regression analysis, the value of adjusted R^2 was 0.881. It is well enough as it is particularly not a low value in regression model.

The stress level of UUM student was at the moderate level with 269 students (71.3%) was recorded to fall in this range. In interpersonal source, within the 6 items, change in social activities (IP4, mean = 3.24) was the most stressful life event. In intrapersonal source, within the 16 items, decline in personal health (IRP10, mean = 3.97) was the most stressful life event. In academic source, within the 8 items, increased class workload (A1, mean = 3.75) was the most stressful life event. In environmental source, within the 10 items, vacation or breaks (E1, mean = 3.45) was the most stressful life event. In language source, within the 4 items, I am not use to the English way of thinking (L2, mean = 3.58) was the most stressful life event.

The top 5 of stress sources of UUM students were coming from the intrapersonal sources, academic sources and language sources. The biggest source was resulted by the decline in personal health of intrapersonal source (IRP10, mean = 3.97). The remaining sources are listed in the sequence as followed: the academic source's increased class workload (A1, mean = 3.75), lower grade than anticipated (A2, mean = 3.71) and anticipation of graduation (A6, mean = 3.71). Finally, the last one was language source's I am not use to the English way of thinking (L2, mean = 3.58). Surprisingly, none of the stress sources was created by environment. Among the top 5 of stress sources, 3 were created from academic. It signified a focus on the academic

matter of UUM is needed to pay attention by higher authorities. The least event to be occurred among them was usually generated from intrapersonal source. This includes with: death of friend (IRP15, mean = 1.98), change in religious beliefs (IRP8, mean = 2.09) and death of a family member (IRP14, mean = 2.11).

5.2 Conclusion

In this modernization era, the number of university students is getting more and more. However, no much people care about the condition of students in local universities. Still, the studies on students stress are limited and hard to get the statistics officially (Khadijah et al., 2013). Therefore, it is important to do a study particularly for university students in order to determine their stress level and stress sources.

It is a common knowledge that stress can cause a lot of the mental health problems. Students should not neglect it because it may critically hazard not only for oneself but also to the people beside him (Andrews & Hejdenberg, 2007). Perceived Stress Scale was selected in this study due to its popularity (Cohen et al., 1983). The score for stress level is: low stress (10-23), moderate stress (24-36) and high stress (37-50). The results recorded 4.0% of the students had low stress, 71.3% of the students had moderate stress and 24.7% of the students had high stress. The stress levels for students of UUM were comparatively high and concern should be taken in.

The reliability of stress, interpersonal, intrapersonal, academic, environment and language was tested by using the reliability analysis. The Cronbach's Alpha value of each variable was 0.840, 0.905, 0.886, 0.899, 0.811 and 0.894 respectively. All were reliable tested. For factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's test showed the appropriate value of 0.948, which was above the minimum value of 0.5. The Bartlett test of sphericity was significant ($p < 0.05$). Scree plot suggested 2 determinant factors as a recommendation to this research. Based on factor analysis, all the communalities and loading values were above the cut off threshold. Academic was tested as the most variance in student stress.

This study also showed that stress had a strong positive linear with interpersonal ($r = 0.901$, $p < 0.05$), intrapersonal ($r = 0.857$, $p < 0.05$), academic ($r = 0.918$, $p < 0.05$) and environment ($r = 0.846$, $p < 0.05$). Stress had a moderate positive linear with language ($r = 0.568$, $p < 0.05$). Multiple regression analysis showed the adjusted R^2 value was 0.881.

The hypothesis tested that student stress showed the significant differences and affected by interpersonal sources, academic sources and environmental sources. The major stress sources consisted of intrapersonal source's decline in personal health, academic source's increased class workload, academic source's lower grade than anticipated, academic source's anticipation of graduation and language source's I am not use to the English way of thinking.

5.3 Limitation and Recommendation for Further Research

For limitation, Student Stress Survey was only used for stressor findings. This test could not show any stress level for students. The 5 point Likert scale may not easy to fulfill the assumption for all the analysis technique. However, student stress level was able to show by using Perceived Stress Scale as shown in Table 4.19. With this understanding, a measure can be done for both scales if only a new Student Stress Scale is used in further research development. The sampling method was put costing and convenience at the first place. Also, it was due to time constraint. Indeed, systematic random sampling method is the better choice. Malaysia government does not provide any national data associated with this kind of study. Therefore, it could only do comparison with the limited references from local.

Since UUM is the famous university for preparatory university student to choose with, the welfare of student needs to be monitored frequently especially for the student's health. Mental health problems show the potential threat to students' health, academic performance and so on. The further in-depth investigations are needed to determine the status of university students. Other factors such as demographic characteristic of respondents should be taken into account. Students need to enhance their management skill and learning skill in university. This is useful for the students to reduce their stress in university. A more actively participation in any event can help students to get a better social interaction. The clean and leisure environment should be maintained and enhanced by all authorities and students. This will improve the health of students and prevent from any illness (Evans & Kelly, 2004).

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APPENDIX A

SET OF QUESTIONNAIRES

INFORMED CONSENT LETTER

Dear Respondent:

I am a master candidate in the College of Business Universiti Utara Malaysia (UUM). I am conducting a study of student stress as part of the requirement for my master degree. The title is Analysing Sources of Stress among Business Students: Evidence from Universiti Utara Malaysia. The objective of this academic research paper is to determine the relationships of UUM students stress based on the selected scales (Acculturative Hassles Scale for Chinese Students, Student Stress Survey and Perceived Stress Scale). The sources of the students' stress will be identified just after the data are analysed. Further in-depth analysis will be used to test the relationships of independent variables and dependent variable.

By doing so, I have a survey that may need your help to assist me. So, I enclose herewith a copy of this letter that consists of questionnaires. All the items are asking about your feelings and thoughts to your study for the whole semester. I would like very much to spend you a little of time to have a look on those questions and fill them up. Your participation is voluntary. Filling in the survey indicates that you have read the information and accept to participate in this study. Your response will be private and confidential.

This survey consists of four parts. Please answer all the parts accordingly by follow the instructions.

Part A: Demographic Data

Part B: Perceived Stress Scale

Part C: Student Stress Survey

Part D: Acculturative Hassles Scale for Chinese Students

Thank you first for spending your precious time and making contribution in completing this survey. I would express my heartfelt gratitude to those supports and encouragements. If you have any queries, please do not hesitate to contact me. I can be reached by sending email to ongqihong@yahoo.com.

Yours Sincerely,

Ong Qi Hong

Part A: Demographic Data

Instruction: Please select the appropriate choice that represents you.

1. Gender:
   [ ] Male [ ] Female

2. Ethnicity:
   [ ] Malay [ ] Chinese [ ] Indian [ ] Others

3. Age (years):
   [ ] ≤ 20 years [ ] 21-30 years [ ] 31-40 years [ ] ≥ 41 years

4. Level of Education:
   [ ] Diploma [ ] Bachelor's degree
   [ ] Master's degree [ ] Phd.

5. Year of Study:
   [ ] First year [ ] Second year
   [ ] Third year [ ] Fourth year and above

Part B: Perceived Stress Scale (Cohen at al., 1983)

Instruction: The questions in this scale are asking about the respondent's feelings and thoughts during the last month. In each case, respondent will be asked to indicate by choosing how often a respondent felt or thought a certain way.

1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Always (Question 1, 2, 3, 6, 9 & 10)
1=Always; 2=Often; 3=Sometimes; 4=Rarely; 5=Never (Question 4, 5, 7 & 8)

1. In the last month, how often have you been upset because of something that happened unexpectedly? 1 2 3 4 5
2. In the last month, how often have you felt that you were unable to control the important things in your life? 1 2 3 4 5
3. In the last month, how often have you felt nervous and stress? 1 2 3 4 5
4. In the last month, how often have you felt confident about your ability to handle your personal problems? 1 2 3 4 5
5. In the last month, how often have you felt that things were going your way? ……. 1 2 3 4 5
6. In the last month, how often have you found that you could not cope with all the things that you had to do? 1 2 3 4 5
7. In the last month, how often have you been able to control irritations in your life? 1 2 3 4 5
8. In the last month, how often have you felt that you were on top of things? 1 2 3 4 5
9. In the last month, how often have you been angered because of things that were outside of your control? 1 2 3 4 5
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 1 2 3 4 5

Part C: Student Stress Survey (Insel & Roth, 1985)

Instruction: Please select the scale for the following items according to your stress experiences in your study.

1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Always

Items	1	2	3	4	5
1. Finding new friend					
2. Working with un-acquainted people					
3. Roommate's conflict					
4. Change in social activities					
5. Fight with friend					
6. Trouble with parents					
7. New responsibilities					
8. Started college					
9. Change in sleeping habits					
10. Change in eating habits					
11. Outstanding personal achievement					
12. Financial difficulties					
13. Spoke in public					
14. Change in religious beliefs					
15. Minor law violation					
16. Decline in personal health					
17. Held a job					
18. Change in use of alcohol or drugs					
19. Engagement/marriage					
20.Death of a family member					
21. Death of a friend					
22. Severe injury					
23. Increased class workload					
24. Lower grade than anticipated					
25. Change of major					
26. Search for graduate school/job (preparation after graduate)					
27. Missed too many classes					
28. Anticipation of graduation (expectation after graduation)					
29. Serious argument with instructor					
30. Transferred schools					
31. Vacations / breaks (no vacations/breaks or it was too short or not enough)					
32. Waited in long line					
33. Placed in unfamiliar situation					
34. Change in living environment					
35. Car trouble					
36. Computer problems					
37. Messy living conditions					
38. Put on hold for extended period of time (waiting for something for uncertainty time)					

39. Quit job					
40. Divorce between parents					

Part D: Acculturative Hassles Scale for Students (Pan at el., 2010)

Instruction: Please select the scale for the following items according to your stress experiences in your study.

1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Always

Items	**1**	**2**	**3**	**4**	**5**
1. I am not able to express my ideas in English fluently					
2. I am not use to the English way of thinking					
3. I do not dare to speak English in class and seminar					
4. I do not have a sufficient English vocabulary					

APPENDIX B

MISSING DATA

Table 1 *Stress statistics*

		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
N	Valid	377	377	377	377	377	377	377	377	377	377
	Missing	0	0	0	0	0	0	0	0	0	0

Table 2 *Interpersonal statistics*

		IP1	IP2	IP3	IP4	IP5	IP6
N	Valid	377	377	377	377	377	377
	Missing	0	0	0	0	0	0

Table 3 *Intrapersonal statistics*

		IRP 1	IRP 2	IRP 3	IRP 4	IRP 5	IRP 6	IRP 7	IRP 8	IRP 9	IRP 10	IRP 11	IRP 12	IRP 13	IRP 14	IRP 15	IRP 16
N	Valid	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4 *Academic statistics*

		A1	A2	A3	A4	A5	A6	A7	A8
N	Valid	377	377	377	377	377	377	377	377
	Missing	0	0	0	0	0	0	0	0

Table 5 *Environmental statistics*

		E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
N	Valid	377	377	377	377	377	377	377	377	377	377
	Missing	0	0	0	0	0	0	0	0	0	0

Table 6 *Language statistics*

		L1	L2	L3	L4
N	Valid	377	377	377	377
	Missing	0	0	0	0

APPENDIX C

OUTLIERS ASSESSMENT

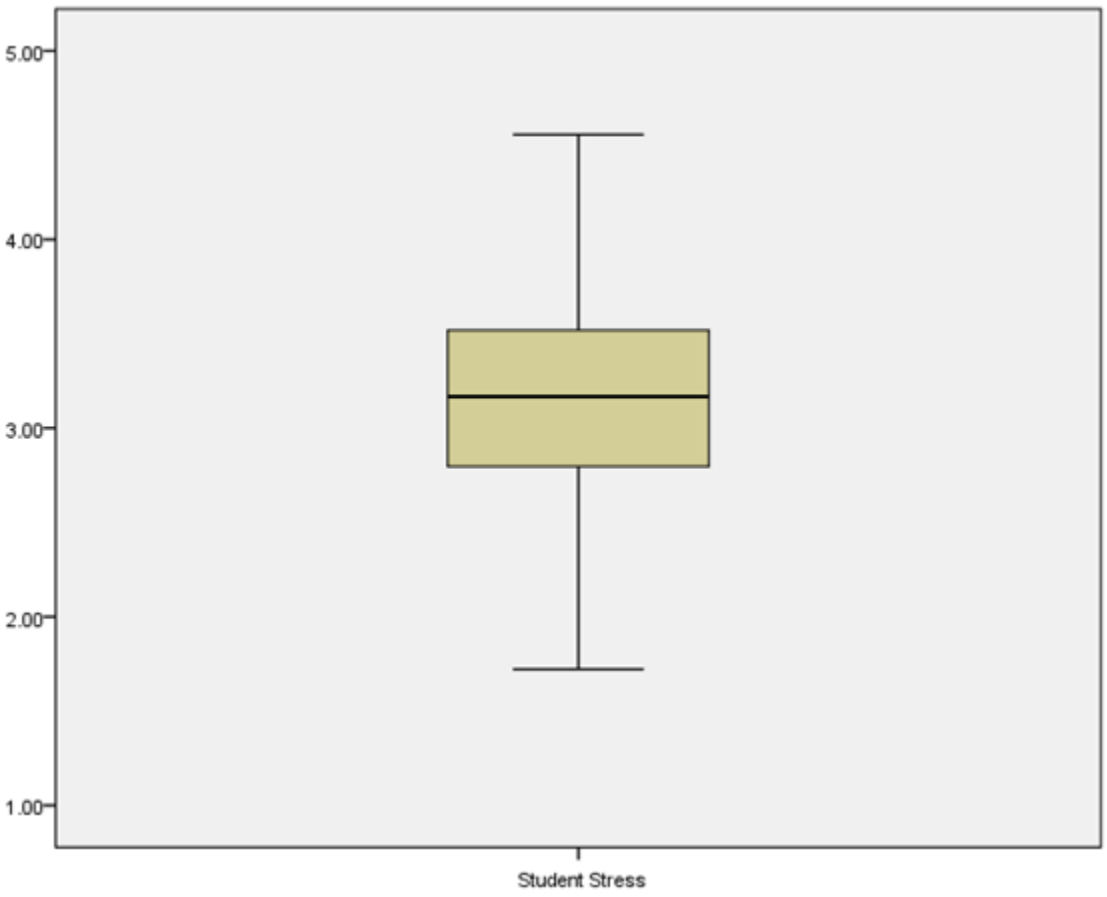
Figure 1 *Stem and leaf plot*

Student Stress Stem-and-Leaf Plot

Frequency	Stem	&	Leaf
2.00	1	.	77
6.00	1	.	888999
8.00	2	.	00000111
10.00	2	.	2222223333
22.00	2	.	4444444445555555555
50.00	2	.	66666666666666666666677777777777777777777777777
54.00	2	.	88888888888888888888888889999999999999999999999999
43.00	3	.	00000000000000000000000111111111111111111
55.00	3	.	22222222222222222222222222233333333333333333333333333
50.00	3	.	44444444444444444444444444555555555555555555555
37.00	3	.	66666666666666666677777777777777777
22.00	3	.	8888888888888999999999
9.00	4	.	000011111
6.00	4	.	222223
3.00	4	.	455

Stem width: 1.00
Each leaf: 1 case(s)

Figure 2 *Box plot*



APPENDIX D

RESULT OF DATA

Table 1 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	126	33.4	33.4	33.4
	Female	251	66.6	66.6	100.0
	Total	377	100.0	100.0	

Table 2 Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	187	49.6	49.6	49.6
	Chinese	179	47.5	47.5	97.1
	Indian	6	1.6	1.6	98.7
	Others	5	1.3	1.3	100.0
	Total	377	100.0	100.0	

Table 3 Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	≤ 20 years	24	6.4	6.4	6.4
	21-30 years	327	86.7	86.7	93.1
	31-40 years	18	4.8	4.8	97.9
	≥ 41 years	8	2.1	2.1	100.0
	Total	377	100.0	100.0	

Table 4 Level of education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	6	1.6	1.6	1.6
	Bachelor's degree	311	82.5	82.5	84.1
	Master's degree	52	13.8	13.8	97.9
	Phd.	8	2.1	2.1	100.0
	Total	377	100.0	100.0	

Table 5 Year of study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First year	44	11.7	11.7	11.7
	Second year	149	39.5	39.5	51.2
	Third year	137	36.3	36.3	87.5
	Fourth year and above	47	12.5	12.5	100.0
	Total	377	100.0	100.0	

Table 6 Perceived stress scale: Stress

Item	N	Minimum	Maximum	Mean	Std. Deviation
S1. In the last month, how often have you been upset because of something that happened unexpectedly?	377	1	5	3.35	.812
S2. In the last month, how often have you felt that you were unable to control the important things in your life?	377	1	5	3.25	.842
S3. In the last month, how often have you felt nervous and stress?	377	1	5	3.79	.882
S4. In the last month, how often have you felt confident about your ability to handle your personal problems?	377	1	5	3.15	.849
S5. In the last month, how often have you felt that things were going your way?	377	1	5	3.06	.776
S6. In the last month, how often have you found that you could not cope with all the things that you had to do?	377	1	5	3.17	.804
S7. In the last month, how often have you been able to control irritations in your life?	377	1	5	3.36	.671
S8. In the last month, how often have you felt that you were on top of things?	377	1	5	3.42	.680
S9. In the last month, how often have you been angered because of things that were outside of your control?	377	1	5	3.26	.927
S10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	377	1	5	3.19	.853
Valid N (listwise)	377				

Table 7 Student stress survey: Interpersonal

	N	Minimum	Maximum	Mean	Std. Deviation
IP1. Finding new friend	377	1	5	3.15	.655
IP2. Working with un-acquainted people	377	1	5	3.18	.759
IP3. Roommate's conflict	377	1	5	3.23	.749
IP4. Change in social activities	377	1	5	3.24	.810
IP5. Fight with friend	377	1	5	3.05	.888
IP6. Trouble with parents	377	1	5	2.99	.895
Valid N (listwise)	377				

Table 8 Student stress survey: Intrapersonal

	N	Minimum	Maximum	Mean	Std. Deviation
IRP1. New responsibilities	377	1	5	3.55	.760
IRP2. Started college	377	1	5	3.41	.804
IRP3. Change in sleeping habits	377	1	5	3.25	.811
IRP4. Change in eating habits	377	1	5	3.17	.836
IRP5. Outstanding personal achievement	377	1	5	3.47	.881
IRP6. Financial difficulties	377	1	5	3.35	.905
IRP7. Spoke in public	377	1	5	3.50	.755
IRP8. Change in religious beliefs	377	1	5	2.09	.979
IRP9. Minor law violation	377	1	5	3.33	.754
IRP10. Decline in personal health	377	1	5	3.97	.771
IRP11. Held a job	377	1	5	3.45	.907
IRP12. Change in use of alcohol or drugs	377	1	5	3.10	.875
IRP13. Engagement/marriage	377	1	5	2.12	1.249
IRP14. Death of a family member	377	1	5	2.11	.961
IRP15. Death of a friend	377	1	5	1.98	.909
IRP16. Severe injury	377	1	5	3.14	.879
Valid N (listwise)	377				

Table 9 Student stress survey: Academic

	N	Minimum	Maximum	Mean	Std. Deviation
A1. Increased class workload	377	1	5	3.75	.804
A2. Lower grade than anticipated	377	1	5	3.71	.850
A3. Change of major	377	1	5	3.13	.937
A4. Search for graduate school/job (preparation after graduate)	377	1	5	3.47	.866
A5. Missed too many classes	377	1	5	2.34	.858
A6. Anticipation of graduation (expectation after graduation)	377	1	5	3.71	.877
A7. Serious argument with instructor	377	1	5	2.60	.775
A8. Transferred schools	377	1	5	2.59	.760
Valid N (listwise)	377				

Table 10 Student stress survey: Environment

	N	Minimum	Maximum	Mean	Std. Deviation
E1. Vacations/breaks (no vacations/breaks or it was too short or not enough)	377	1	5	3.45	.865
E2. Waited in long line	377	1	5	3.29	.877
E3. Placed in unfamiliar situation	377	1	5	3.24	.795
E4. Change in living environment	377	1	5	3.33	.775
E5. Car trouble	377	1	5	2.50	.806
E6. Computer problems	377	1	5	2.78	1.009
E7. Messy living conditions	377	1	5	3.43	.715
E8. Put on hold for extended period of time (waiting for something for uncertainty time)	377	1	5	3.40	.864
E9. Quit job	377	1	5	2.11	1.185
E10. Divorce between parents	377	1	5	2.47	.711
Valid N (listwise)	377				

Table 11 Acculturative hassles scale for students: Language

	N	Minimum	Maximum	Mean	Std. Deviation
L1. I am not able to express my ideas in English fluently	377	1	5	3.56	.827
L2. I am not use to the English way of thinking	377	1	5	3.58	.816
L3. I do not dare to speak English in class and seminar	377	1	5	3.50	.769
L4. I do not have a sufficient English vocabulary	377	1	5	3.56	.824
Valid N (listwise)	377				

Table 12 Mean and standard deviation of variable

	N	Minimum	Maximum	Mean	Std. Deviation
Stress	377	1.80	5.00	3.3003	.52046
Interpersonal	377	1.17	4.83	3.1397	.65646
Intrapersonal	377	1.44	4.56	3.0617	.53746
Academic	377	1.38	5.00	3.1628	.64482
Environment	377	1.60	4.50	3.0008	.52998
Language	377	1.00	5.00	3.5477	.70502
Valid N (listwise)	377				

APPENDIX E

RELIABILITY

Scale: Stress

Table 1 Reliability statistics

Cronbach's Alpha	N of Items
.840	10

Table 2 Item statistics

	Mean	Std. Deviation	N
S1	3.35	.812	377
S2	3.25	.842	377
S3	3.79	.882	377
S4	3.15	.849	377
S5	3.06	.776	377
S6	3.17	.804	377
S7	3.36	.671	377
S8	3.42	.680	377
S9	3.26	.927	377
S10	3.19	.853	377

Table 3 Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S1	29.65	22.489	.511	.827
S2	29.75	22.202	.526	.826
S3	29.21	21.848	.541	.824
S4	29.86	24.485	.224	.854
S5	29.94	24.393	.273	.848
S6	29.83	22.209	.558	.823
S7	29.64	21.364	.850	.800
S8	29.59	21.376	.835	.801
S9	29.74	21.140	.597	.819
S10	29.81	21.811	.571	.821

Table 4 Scale statistics

Mean	Variance	Std. Deviation	N of Items
33.00	27.088	5.205	10

Scale: Interpersonal

Table 5 Reliability statistics

Cronbach's Alpha	N of Items
.905	6

Table 6 Item statistics

	Mean	Std. Deviation	N
IP1	3.15	.655	377
IP2	3.18	.759	377
IP3	3.23	.749	377
IP4	3.24	.810	377
IP5	3.05	.888	377
IP6	2.99	.895	377

Table 7 Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
IP1	15.68	11.663	.765	.888
IP2	15.66	10.822	.825	.877
IP3	15.61	11.292	.727	.890
IP4	15.60	11.108	.695	.895
IP5	15.79	10.590	.716	.893
IP6	15.85	10.387	.750	.888

Table 8 Scale statistics

Mean	Variance	Std. Deviation	N of Items
18.84	15.514	3.939	6

Scale: Intrapersonal

Table 9 Reliability statistics

Cronbach's Alpha	N of Items
.886	16

Table 10 Item statistics

	Mean	Std. Deviation	N
IRP1	3.55	.760	377
IRP2	3.41	.804	377
IRP3	3.25	.811	377
IRP4	3.17	.836	377
IRP5	3.47	.881	377
IRP6	3.35	.905	377
IRP7	3.50	.755	377
IRP8	2.09	.979	377
IRP9	3.33	.754	377
IRP10	3.97	.771	377
IRP11	3.45	.907	377
IRP12	3.10	.875	377
IRP13	2.12	1.249	377
IRP14	2.11	.961	377
IRP15	1.98	.909	377
IRP16	3.14	.879	377

Table 11 Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
IRP1	45.44	63.789	.789	.871
IRP2	45.58	63.414	.773	.871
IRP3	45.73	64.324	.689	.874
IRP4	45.82	63.366	.743	.871
IRP5	45.51	63.325	.702	.872
IRP6	45.64	63.647	.657	.874
IRP7	45.49	64.612	.722	.873
IRP8	46.90	68.548	.274	.890
IRP9	45.66	64.657	.720	.873
IRP10	45.01	65.641	.617	.876
IRP11	45.54	64.446	.596	.877
IRP12	45.89	63.963	.658	.874
IRP13	46.87	72.794	-.019	.910
IRP14	46.88	68.918	.257	.891
IRP15	47.01	68.867	.282	.889
IRP16	45.84	63.515	.690	.873

Table 12 Scale statistics

Mean	Variance	Std. Deviation	N of Items
48.99	73.949	8.599	16

Scale: Academics

Table 13 Reliability statistics

Cronbach's Alpha	N of Items
.899	8

Table 14 Item statistics

	Mean	Std. Deviation	N
A1	3.75	.804	377
A2	3.71	.850	377
A3	3.13	.937	377
A4	3.47	.866	377
A5	2.34	.858	377
A6	3.71	.877	377
A7	2.60	.775	377
A8	2.59	.760	377

Table 15 Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
A1	21.55	20.482	.753	.880
A2	21.59	20.551	.693	.885
A3	22.18	19.778	.715	.883
A4	21.83	20.812	.639	.890
A5	22.96	21.570	.540	.899
A6	21.59	19.854	.766	.878
A7	22.70	21.047	.697	.885
A8	22.72	21.252	.682	.887

Table 16 Scale statistics

Mean	Variance	Std. Deviation	N of Items
25.30	26.610	5.159	8

Scale: Environment

Table 17 Reliability statistics

Cronbach's Alpha	N of Items
.811	10

Table 18 Item statistics

	Mean	Std. Deviation	N
E1	3.45	.865	377
E2	3.29	.877	377
E3	3.24	.795	377
E4	3.33	.775	377
E5	2.50	.806	377
E6	2.78	1.009	377
E7	3.43	.715	377
E8	3.40	.864	377
E9	2.11	1.185	377
E10	2.47	.711	377

Table 19 Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E1	26.56	22.662	.568	.786
E2	26.72	21.628	.697	.771
E3	26.76	22.691	.629	.780
E4	26.68	22.086	.742	.769
E5	27.51	22.570	.636	.779
E6	27.23	24.001	.310	.817
E7	26.58	23.106	.650	.781
E8	26.61	22.893	.538	.789
E9	27.89	27.473	-.064	.872
E10	27.54	23.175	.644	.781

Table 20 Scale statistics

Mean	Variance	Std. Deviation	N of Items
30.01	28.088	5.300	10

Scale: Language

Table 21 Reliability statistics

Cronbach's Alpha	N of Items
.894	4

Table 22 Item statistics

	Mean	Std. Deviation	N
L1	3.56	.827	377
L2	3.58	.816	377
L3	3.50	.769	377
L4	3.56	.824	377

Table 23 Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
L1	10.63	4.531	.778	.860
L2	10.62	4.594	.771	.862
L3	10.69	4.885	.729	.878
L4	10.63	4.515	.789	.855

Table 24 Scale statistics

Mean	Variance	Std. Deviation	N of Items
14.19	7.953	2.820	4

APPENDIX F

FACTOR ANALYSIS

Table 1 Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.948
Bartlett's Test of Sphericity	Approx. Chi-Square	22491.190
	df	1431
	Sig.	.000

Table 2 Communalities

	Initial	Extraction
S1	1.000	.452
S2	1.000	.935
S3	1.000	.551
S4	1.000	.907
S5	1.000	.650
S6	1.000	.454
S7	1.000	.848
S8	1.000	.923
S9	1.000	.590
S10	1.000	.560
IP1	1.000	.706
IP2	1.000	.835
IP3	1.000	.824
IP4	1.000	.822
IP5	1.000	.803
IP6	1.000	.833
IRP1	1.000	.763
IRP2	1.000	.730
IRP3	1.000	.818
IRP4	1.000	.812
IRP5	1.000	.718
IRP6	1.000	.873
IRP7	1.000	.742
IRP8	1.000	.907
IRP9	1.000	.732
IRP10	1.000	.595
IRP11	1.000	.904
IRP12	1.000	.713
IRP13	1.000	.896
IRP14	1.000	.904
IRP15	1.000	.963

IRP16	1.000	.745
A1	1.000	.670
A2	1.000	.636
A3	1.000	.769
A4	1.000	.907
A5	1.000	.926
A6	1.000	.649
A7	1.000	.787
A8	1.000	.793
E1	1.000	.866
E2	1.000	.894
E3	1.000	.787
E4	1.000	.857
E5	1.000	.871
E6	1.000	.874
E7	1.000	.882
E8	1.000	.772
E9	1.000	.887
E10	1.000	.919
L1	1.000	.773
L2	1.000	.790
L3	1.000	.708
L4	1.000	.804

Extraction Method: Principal Component Analysis.

APPENDIX G

PEARSON COEFFICIENT CORRELATION TEST

Table 1 Correlations

		S	IP	IRP	A	E	L
Stress (S)	Pearson Correlation	1	.901**	.857**	.918**	.846**	.568**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	Sum of Squares and Cross-products	101.850	115.703	90.144	115.846	87.760	78.320
	Covariance	.271	.308	.240	.308	.233	.208
	N	377	377	377	377	377	377
Interpersonal (IP)	Pearson Correlation	.901**	1	.889**	.883**	.861**	.581**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	Sum of Squares and Cross-products	115.703	162.031	117.960	140.572	112.625	101.027
	Covariance	.308	.431	.314	.374	.300	.269
	N	377	377	377	377	377	377
Intrapersonal (IRP)	Pearson Correlation	.857**	.889**	1	.868**	.820**	.598**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	Sum of Squares and Cross-products	90.144	117.960	108.613	113.145	87.831	85.140
	Covariance	.240	.314	.289	.301	.234	.226
	N	377	377	377	377	377	377
Academic (A)	Pearson Correlation	.918**	.883**	.868**	1	.846**	.571**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	Sum of Squares and Cross-products	115.846	140.572	113.145	156.336	108.726	97.538
	Covariance	.308	.374	.301	.416	.289	.259
	N	377	377	377	377	377	377
Environment (E)	Pearson Correlation	.846**	.861**	.820**	.846**	1	.487**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	Sum of Squares and Cross-products	87.760	112.625	87.831	108.726	105.610	68.436
	Covariance	.233	.300	.234	.289	.281	.182
	N	377	377	377	377	377	377
Language (L)	Pearson Correlation	.568**	.581**	.598**	.571**	.487**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	Sum of Squares and Cross-products	78.320	101.027	85.140	97.538	68.436	186.891
	Covariance	.208	.269	.226	.259	.182	.497
	N	377	377	377	377	377	377

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX H

MULTIPLE REGRESSION ANALYSIS

Table 1 Descriptive statistics

	Mean	Std. Deviation	N
Stress	3.3003	.52046	377
Interpersonal	3.1397	.65646	377
Intrapersonal	3.0617	.53746	377
Academic	3.1628	.64482	377
Environment	3.0008	.52998	377
Language	3.5477	.70502	377

Table 2 Model summary

Model					Change Statistics				
	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.939[a]	.882	.881	.17962	.882	557.193	5	371	.000

a. Predictors: (Constant), Language, Environment, Intrapersonal, Academic, Interpersonal

b. Dependent Variable: Stress

Table 3 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.881	5	17.976	557.193	.000[a]
	Residual	11.969	371	.032		
	Total	101.850	376			

a. Predictors: (Constant), Language, Environment, Intrapersonal, Academic, Interpersonal

b. Dependent Variable: Stress

Table 4 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.747	.062		11.971	.000	.625	.870
	Interpersonal	.260	.038	.328	6.834	.000	.185	.335
	Intrapersonal	.035	.042	.036	.837	.403	-.047	.117
	Academic	.402	.035	.498	11.490	.000	.333	.471
	Environment	.100	.037	.102	2.678	.008	.027	.173
	Language	.016	.017	.022	.954	.341	-.017	.049

a. Dependent Variable: Stress