ANALYSIS OF FACTORS INFLUENCING THE ACADEMIC PERFORMANCE OF UNDERGRADUATES IN KAMPAR

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DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

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LIST OF ABBREVIATIONS

SAS	Statistical Analysis System
PFA	Production Function Approach
MLR	Multi Linear Regression

PREFACE

This research has analysed the factors influencing the academic performance of tertiary education students in Kampar. A good Academic performance is deemed as one of the important aspects that support the growth of a country and also eradicate unemployment. However, researches have also identified that academic performance of students in tertiary education has been deteriorating. Therefore it is deemed to be important to identify the factors that influence academic performance.

Factors influencing academic performance include academic and non- academic factors. The academic factors which are analysed in this research include teaching method. The non-academic factors are comprised of time management, attendance of students, racial ideology and sleep. These are factors are the independent variable of this research. These factors are also deemed to have a form of association with the dependent variable which is the academic performance. Thus, this research will be beneficial to the students as well the management of the institutions. This research has also addressed a research gap or deficiency. Researches in foreign countries have addressed racial ideology as one of the factors that influence academic performance. However in our country very few researches have considered this factor. Therefore, this is regarded as the deficiency and this research is carried to fill this gap.

This research has been divided into five chapters, which are introduction of the research in Chapter 1, theoretical framework and literature review in Chapter 2, methodology in Chapter 3, data analysis in Chapter 4 and discussion in Chapter 5.

ABSTRACT

The principal objective of this study is to analyse the factors influencing the academic performance of tertiary educational students in Kampar. This helps to raise a better understanding on the factors influencing the student's performance and also to contribute to the Tertiary Educational Institutions. The factors subject to analysis include teaching method, time management, attendance of students, sleep, and racial ideology. Besides, this research is also conducted based on the Production Function Approach which is deemed to be an economic based theory. The hypotheses are designed to explain the relationship between the independent variables and the dependent variable. Since the sampling method is convenient than the census, the convenience sampling has been used to conduct this study. The data collected through the questionnaires are tested using the SAS software. While, the relationship between the variables was tested using the multiple linear regression model**.** Findings show that teaching method, time management, attendance of students, and sleep have a positive influence towards the academic performance of tertiary education students. Racial ideology has a negative effect on tertiary education student's academic performance. Several limitations were encountered in this study as well. Such include failure to collect data from foreign students, usage of questionnaires, and limited geographical area coverage. These limitations can be overcome through careful procedures and other methods.

CHAPTER 1: INTRODUCTION

1.0 Introduction

This chapter provides a general understanding of the entire research study. The background of the study tends to explain the factors influencing the academic performance and discusses about the problem statement which clarifies the reason for the topic to be selected and the purpose of the study. The research questions are also included in this chapter as a form of argument. The specific objectives set out the purpose of each independent variable. This chapter also explains the significance of the study which outlines the importance of the research. Finally, the outline of the study provides a brief summarisation from Chapter 1 to Chapter 5.

1.1 Research Background

Measuring the academic performance of a student in tertiary education has never been an easy task as it cannot be easily quantified or measured in units. In most circumstances student performance may deemed to be a product of environmental, socio-economic or psychological factor. However, failure to recognize these factors may retard the educational system and lead to higher failure rates. This does not stop there, but it will create a chain effect by reducing the throughput of good quality result to an unacceptable level of attritions. Therefore, it is imperative to diagnose the factors that associate suboptimal academic performance in order to institute the most reasonable remedy (Schwerdt & Wuppermann, 2008).

The factors influencing student performance can be classified into two categories: (1) academic factors and (2) non-academic factors (Laurel, Wong, Chan, &

Safiyyah, 2008). Academic factors include teaching methods, self-learning efforts, and student previous results, whilst, non-academic performance are those like health factors, personal factors, financial factors, and even the environment and its composition like people and culture (Laurel et.al., 2008).

According to the Cambridge University Report 2003, academic performance is the performance level in examination and major modules. In Malaysia, tertiary education relates to third level education like Diploma, Degree, and certificates. Such tertiary educational providers include Universities, Colleges, and Polytechniques. Malaysia has a total of 627 Undergraduates which comprise of 537 colleges, 44 universities, 25 university colleges, and 21 Polytechniques. These institutions play a pivotal role in providing education and enhancing the well-being of the country economy and social aspects.

1.2 Problem Statement

Typically, Hijazi and Noqvi (2006) claimed that there is an increasing trend of dropping grades in Malaysian higher educational institutions. Thus, deterioration of student academic performance is the problem that would seek for solutions. This research has been conducted to analyse the factors influencing academic performance. It also examined the possible determinants that have certain degree of relevance in affecting student academic performance. Past studies might have suggested solutions which may assist problem solving.

Sun (2010) revealed that, type of classroom instruction has some influence on student performance. More time spent on lecture style presentation was found to be an important determinant that impacts the performance and teacher quality (Schwerdt & Wuppermann, 2008). Basile and D'Aquila (2002) determined that technology aided teaching yielded a positive studying attitude which lead to better grades. George, Dixon,Stansal, Gelb, and Pheri (2008) found that good time management able to reduce stress and lead to better academic achievement. Good

practices of time management can be central to academic success and strategies aimed at improving the effective use of time are often recommended as an aid to enhance the achievement of students (Misra & McKean, 2000).

Prior research has established that higher performance could be obtained through regular class attendance (Guney, 2009; Kwenda, 2011; Kirby & McElroy, 2003). Mandatory attendance policy will be able to enhance academic performance (Guney, 2009). Nihayah, Ismarulyusda, Syarif, NurZakiah, Baharudin, and Fadzil (2011) argued that sleeping hours do not associate with students' CGPA. However, Trockel, Barnes, and Egget (2000) and Baniit (2002) emphasized that sleep has largest impact on GPA where good sleeping habit able to enhance academic performance. More profoundly, racial ideology also found to be associated with academic performance. Past studies claimed that ethnic minority have lower academic performance than the ethnic majority of a nation due to different cultural characteristics, which caused discrimination. Frequent organization of social activities would be able to cultivate the relationship among different ethnics and therefore lead to better academic performance (Johnson, Crosnoe, &Elder, 2001; Lee, 2007; Pino& Smith, 2004).

Previous studies seem to neglect the importance of racial ideology as a factor that might affect academic performance which necessitates further studies (Lee, 2007). Furthermore, past studies mainly focused on the Black and White as the researches were conducted in Western countries. However, there are only limited studies which considered the influence of racial ideology in Malaysia. The result might be different if the research is conducted on different racial ideologies in Malaysia. Therefore, this research is aimed to fill this gap.

1.3 Research Objectives

1.3.1 General Objective

To examine factors influencing the academic performance of tertiary education students in Kampar.

1.3.2 Specific Objectives

i. To investigate the relationship between teaching method and academic performance.
ii. To investigate the relationship between time management and academic performance.
iii. To investigate the relationship between attendance of student and academic performance.
iv. To investigate the relationship between sleep and academic performance.
v. To investigate the relationship between racial ideology and academic performance.

1.4 Research Questions

1.4.1 General Question

Which are the factors influencing the academic performance of tertiary education students in Kampar?

1.4.2 Specific Questions

i. Is there any relationship between teaching method and academic performance?
ii. Is there any relationship between time management and academic performance?
iii. Is there any relationship between attendance of student and academic performance?
iv. Is there any relationship between sleep and academic performance?
v. Is there any relationship between racial ideology and academic performance?

1.5 Significance of the Study

This research is conducted to study the factors affecting the academic performance of students who are pursuing their tertiary education. Thus, this study will relatively contribute to the management of tertiary educational institutions to clearly understand the factors affecting the students' academic performance and enable them to conduct a further investigation into the factors while carry out some changes over them to enhance the performance of the students. For instance, change in teaching method might further enhance student understanding. Besides that, the information from this research can serve as a future reference to other researchers on the subject forecast.

1.6 Chapter Layout

Chapter 1 is an overview of the entire research study which constitutes research background, problem statement, research objective, research question, and the

contribution of this study. Chapter 2 includes the literature review, theoretical foundation, theoretical framework which will propose for further analysis and the development of hypothesis. Chapter 3 consists of research design comprising population and sampling procedures, data collection method, variables and measurement, and data analysis technique. Chapter 4 comprises the analysis of data obtained through the survey. Chapter 5 comprised of the discussion and summarization of the research which analyses the factors influencing tertiary education student's academic performance.

1.7 Conclusion

In conclusion, this research focused on the factors influencing the academic performance. This chapter basically provides a general overview of the entire chapter and research. Therefore, this chapter will serve as references for the further investigations in the following chapters.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter sets out the theoretical model which will be used in the research. It also explains how the model can be related to the independent and dependent variables. In this chapter itself, the conceptual framework and hypotheses has been developed.

2.1 Review of the Prior Empirical Studies

2.1.1 Academic Performance

Academic performance is measured in terms of past examination performance, performance in midterms and failure in modules (Roy, 2004; Tan & Yates, 2007). Academic success is important because it is strongly linked to positive outcomes. Not surprisingly, research shows that adults with high levels of education are more likely to be employed and to earn higher salaries (National Center for Education Statistics, 2001).

Beyond work and wages, academic success is important because working Americans will need higher levels of education to tackle the technologically demanding occupations of the future (Brown, 1999). Furthermore, the number of jobs requiring a college education is expected to grow more than twice as fast as those not requiring a college education over the next ten to twenty years (Fleetwood & Shelley, 2000; Rentner & Kober, 2001). Academically successful students will have more employment opportunities than those with less education.

Academic performance can be measured in several ways. A study by Martha (2010) examined the factors affecting student performance. That research measured the undergraduates of Uganda's performance in terms of performance in tests and course work. The most significant and suitable way to measure the performance of undergraduates in Malaysia is the Cumulative Grade Point Average (CGPA).

2.1.2 Teaching Method

Teaching method is deemed to be the role played by the professor in the teaching process and technology used in the process (Jefferson & Kent, 2001). It also can be viewed as the self-organization of the lecturer (Arends, 2007). Majority past studies have looked into this factor but teaching practices were not specifically brought into concern as the studies just analyzed standard-based teacher evaluation system and student achievement (Schwerdt & Wuppermann, 2008) .

Smith, Lee, and Newmann (2001) analyzed the teaching method and its influence on student academic performance. This study was carried out to analyze whether didactic or interactive teaching method was more effective towards academic performance and the results yielded that interactive teaching method associated a better gain in test scores. It involved 250 students from three private schools of the south region of USA. Data was collected using a set of questionnaire consisting 7 items.

Beets and Lobingier (2001) examined the relationship between different teaching methods and their effect on student performance. Data were collected from 275 psychology students, 225 women and 45 men (5 failed to indicate gender) at two institutions. The teaching methods analysed were those basic pedagogical techniques such as using the chalkboard,

overhead projector and also computer projected software. The result of the study provides no evidence of overall difference in student attitude over these three methods.

Basile and D'Aquila (2002) conducted a survey to identify how traditional and computer aided teaching method will influence student behaviour. Students in a Private School were divided into several heterogeneous groups. The teachers were equipped with different teaching materials and the process of teaching was observed. The results showed that computer aided teaching create positive learning attitude.

While Schwerdt and Wuppermann (2008) studied, the effect of single teaching practices on student achievement. The Academic-Success Barrier Battery was developed based on personal or individual factors affecting academic performance to assist the observation. They looked at the effect of time spent on lecture style presentation compared to time spent on problem solving as two mutually exclusive teaching methods. The result of the analysis showed that lecture style presentation contributed to higher student achievement.

Friedland (2005) investigated the effects of different pedagogical techniques and their influence on achievement to compare interactive based learning and traditional teaching method. Thirty-five schools across the 11 local districts of California were randomly selected. Students from grade 4 to 7 were used in a classroom observation. Hence, upon the research, it was suggested that such interactive learning created changes over student learning attitude compared to the Socratic style.

2.1.3 Time Management

Time management has been defined as a behavioral skill that is important in organizing study load (Walker & Siebert, 1980; Talib & Sansgiry, 2012) which includes advance planning, work prioritizing and test preparation (Kirscenbaum & Perri, 1982; Sansgir, Bhosle, & Sail, 2006).Effective time management strategies increase academic performance (Campbell & Svenson, 1992; Powell, 2004).

Plant, Ericsson, Hill, and Asberg (2005) had conducted a research to investigate whether the quantity of study time is significant in influencing the student's academic performance. Participants in the research consist of 88 undergraduate students from Florida State University and they had been given time allocation and academic performance questionnaires. It was found that the amount of study time only emerged as a significant predictor of cumulative GPA when the quality of study which included studying environment and good time planning was taken into consideration. The result implied that good management of time was significant to determine academic grades.

George et al. (2008) conducted a research to investigate the factors associated with success. This study involved a sample of 231 undergraduates from university located at Canada. Participants were required to complete a 5-day time diary and questionnaire assessing the influence of personal, cognitive, and attitudinal factors on success. Result had showed that time-management skills are the second-strongest predictor, significantly associated with success in both correlations and regressions.

Ali, Yunus, Hamzah, Abu, Tarmizi, Nor, Abu Bakar, and Ismail (2008) conducted a research to investigate the impact of time management skill on student's academic performance. This study involved 3025 students

from seven public and two private universities. Findings of this study showed a significant relationship between time management and CGPA.

Zulauf and Gortner (2000) conducted a research to study the effect of good time management on academic performance. A time diary was collected for a period of one week from 93 students enrolled in three classes at Ohio State University. In addition to the time diary, students required to complete a 34-item questionnaire designed to measure individual time management behaviour. The result revealed time management skill and study time were positively correlated with quarter GPA.

Mercanoilglu (2010) conducted a research to examine whether time management practices are predictors of academic performance for master level students. The time management attitudes of master level students were assessed via their scores on a time management questionnaires. Scores on time management questionnaire were correlated with an academic measure called GPA. Semester grade point averages (GPA) were obtained from university records. There is no significant correlation between Grades and time attitude.

2.1.4 Attendance of Students

Attendance refers to the actual school attendance of pupil during the school day (Jones, 2006) and a measure of class involvement (Howard, 2005). High absenteeism will lead to degrade the academic performance (Nasri & Ahmed, 2006).

Burns (2011) conducted a research regarding the relationship between number of class absenteeism and performance improvement which involved 276 students in university located at United States. The level of

improvement was determined by the difference between initial and final exam grades whereas the number of absences was equal to the number of classes the student missed. Result showed that students who attend classes on regular basis have experienced improvement in performance as regular attendance provides students with access to course material which deemed to be important for exams.

Lin (2011) conducted a study regarding the effect of absenteeism on students' exam performance. The study focused on the impact of skipping classes during past exam periods on current exam performance. 203 students in Indiana University located at USA were participated in this study. Daily attendance for each exam period was taken. The effect of skipping classes on a student's exam performance was investigated. Results showed a negative and significant correlation.

Kwenda (2011) examined the factors affecting student's performances in an Introductory Sociology Course. This study used demographic administrative data collected for five consecutive semesters at a state-supported regional university in the south-western part of the United Sates. Based on the findings, it was found that an additional day of missed classes increases the odds of failing the course by 50 percent.

Chen and Lin (2008) conducted a randomized experiment to study the average attendance effect for students who have chosen to attend lectures on their academic performance. The survey involved 114 students who attended the Public Finance course at Tamkang University in Taiwan. Results showed that class attendance has produced a positive and significant impact on students' exam performance.

Rodgers (2003) conducted a research regarding the effect of class attendance on academic performance in a microeconomics class at a medium-size Australian University. The data used in this study were

collected from a class of 131 business and economics students. The results indicated that strong class attendance has a significant effect on academic performance.

2.1.5 Sleep

Sleep is defined as an active, repetitive, and reversible behaviour that serves several different functions such as repair and growth, learning consolidation, and restorative process (Curcio, Ferrar, & Gennaro, 2006).

A research carried by Curcio et al. (2006) on the numerous of studies pertaining to the investigation on the effect of sleeping pattern and sleeping habits on academic performance drew the conclusion that sleep loss and sleep fragmentation could negatively affect the learning and memory and reduce academic achievement. It reflected that poor sleep quality could seriously impair the students' behavioral performance and cognitive functioning and sleep habits is associated with academic performance.

Eliasson, Lettieri, and Eliasson (2010) investigated the importance of total sleep time compared to the timing of sleep and wakefulness for academic performance. Students in Montgomery College, Washington were given questionnaire and asked about their sleep habits. The result showed that timing of sleep and wakefulness appeared to be more important in influencing the academic performance. The factors correlate with academic performance were earlier bed time and wake up time, not total sleep time.

Veldi, Aluoja, and Vasar (2005) conducted a research to investigate the effect of sleep quality on academic performance. The questionnaire based on sleep and daytime symptoms was handed to the students in the

University of Tartu. The result demonstrated that sleep quality, waking up due to noise, waking up due to nightmare, feeling tired in the morning, waking up early in the morning, and daytime sleepiness were associated with academic progress. Therefore, it is believed that students with sleeping problems have a poor academic performance.

A study was conducted to assess the relationship between sleeping habits and duration with academic performance of medical students from a university in Saudi Arabia (Bahammam, Alaseem, Alzakri, Almeneessier, & Sharif, 2012). 600 students were given questionnaire and filled up a two-week sleep diary which was used to record sleep-wake pattern of individuals. The result indicated that reduced sleep time, late bedtimes, catch-up sleep on weekends and increased daytime sleepiness were negatively correlated with academic performance of medical students. Sleep deprivation may impair memory and level of concentration, resulting poor academic performance. Soomro, Channa, and Dayo (2011) investigated the sleep quantity and sleep quality of pharmacy student in University of Sindh Jamshoro by using Pittsburg sleep quality index (PSQI) in the form of questionnaire. The study concluded that poor sleep quality leads to psychological and physiological disturbances which reduce students' efficiency to achieve required criteria in academic performance.

2.1.6 Racial Ideology

Racial ideology in this research is to study how discrimination and racial composition affect students' academic performance (Sanders, 1997). Smalls, White, Chavous, and Seller (2007) researched on 390 African American adolescents to explore the associations of racial ideologies and racial discrimination experiences with academic performance. The result showed that the African Black were afraid of being accused as acting Whites if they achieve higher performance in academic therefore, this led to lower academic performance.

Bankston III and Zhou (2002) have suggested that academic achievement of minority students may be affected by low self-esteem in a white-dominated society. They obtained 6,504 random samples of student interviews from seventh to twelfth grades conducted in 1995 by the National Longitudinal Study of Adolesent Health (Add Health) in United States. They found that Asians show the lowest level of self-esteem and has the highest GPA among the major ethnic group.

Besides that, Pino et al. (2004) has also done a research on how the academic ethic is configured for White and Black students and which variables are significantly related to GPA. The questionnaires consist of twenty questions which were given to 721 students in Georgia Southern University and only 675 students completed the survey. Results showed higher percentage of Blacks having academic ethic (having an academic locus of control; attending class regularly; resisting partying and excessive drinking; and rejecting the GPA perspective) than Whites. However, they had lower GPA than the Whites.

While in Malaysia Lee, AbdolLatif, Bahroom, and Fadzil (2011) examined the relationships between demographics and academic performance among learners in an Open and Distance Learning institution. The research on 761 students of Open University Malaysia showed that greater percentage of Chinese (58.8%) obtained CGPA of 3.00 and above followed by Indians (41.7%) and Malays (29.5%). A research by Alavi and Mansor (2011) in Universiti Teknologi Malaysia showed that most of the international students face challenges adapting to the new situation as they have different background, experience, skills, and command of English which results in lower CGPA than the locals.

2.2 Theoretical Foundation

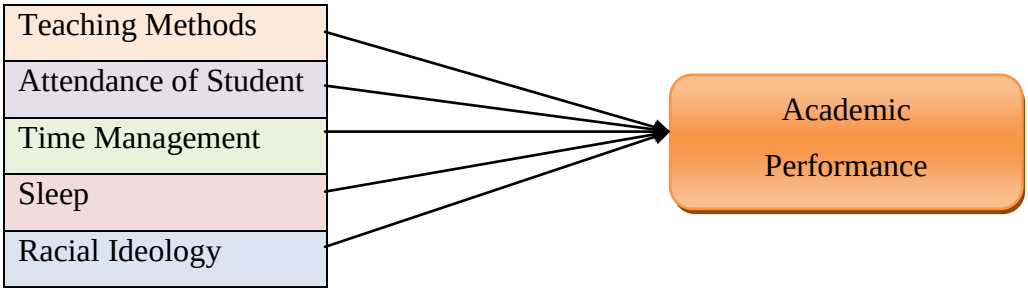
2.2.1 Production Function Approach (PFA)

The theoretical model used in this research is the Production Function Approach (PFA). This approach was initially developed by A. R. J. Turgot in the year 1767. However, it was brought into commercial use during 1928 by Paul Douglas and Charles W. Cobb. PFA has a genesis of economics. In simple terms the PFA model is used to study maximum quantity of an output that can be produced using various combinations of inputs (Gordon, 2007). It is basically about the transformation of input into output of goods and services (refer to Appendix 2.2). The PFA has been relatively used in other fields such as environment and ecosystem (Barbier, 2006), fishing (Padilla & Trinidad, 1995), and sports (Borland, 2005).

The PFA is used in modelling the factors influencing student academic performance. Thus, the student academic achievement is treated as the output and the inputs are the independent variables (Martha, 2010). This model has been also used by other researchers to study the academic performance of students. The common inputs are school resources, teaching quality, and family attributes, while the output is student achievement (Hanushek, 2007). Stinebrickner and Stinebrickner (2007) had also applied the PFA in his academic performance research.

This research which studies factors influencing the academic performance of students in tertiary education used the proposed production function approach. Thus, the inputs are teaching method, time management, attendance of students, racial ideology and sleep while the output is the perceived student performance.

2.3 Proposed Conceptual Framework/Research Model



Adapted from: Martha (2010)

2.4 Hypothesis Development

2.4.1 Teaching Method

The hypothesis on the relationship between teaching method and academic performance of tertiary education students is formed based on several past studies. Study by Smith et al. (2001) indicated a positive relationship between teaching method and academic performance. It was identified that, interactive teaching method could lead to better performance. Besides that, a research Basile and D'Aquila (2002) also showed a positive relationship. The research found that computer aided teaching method can enhance.

Based on the findings from the past researches, the hypothesis developed is as follows:

H1: There is a positive relationship between teaching method and academic performance.

2.4.2 Time Management

The hypothesis on the relationship between time management and academic performance of undergraduates is formed based on several past researches. A study by George et al. (2008) revealed that time management has positive effect on academic performance. The essence of the research showed that, time management skills are the greatest predictors of GPA. Apart from that, findings by Ali et al. (2008) showed significant relationship between time management and CGPA.

Based on the findings from the past researches, the hypothesis developed is as follows:

H2: There is a positive relationship between time management and academic performance.

2.4.3 Attendance of Students

The hypothesis on the relationship between attendance of students and academic performance is formed based on several past researches. A research by Burns (2011) showed that attendance of students has a positive relationship with academic performance. It was found that students who attend classes on regular basis have experienced improvement in performance. Other than that, Rodgers (2003) also found a positive relationship between attendance and academic performance. It was determined that, strong class attendance has a significant effect on academic performance.

Based on the findings from the past researches, the hypothesis developed is as follows:

H3: There is a positive relationship between attendance of students and academic performance.

2.4.4 Sleep

The hypothesis on the relationship between sleep and academic performance of undergraduates is formed based on several past studies.A research carried by Veldi et al. (2005) showed that sleep has positive relationship with academic performance. It was revealed that, students with sleeping problems have a poor academic performance. Besides that, a study Soomro et al. (2011) proved that sleeping quality can affect performance. The results showed that, irregular sleeping habits may affect their attitudes in learning process.

Based on the findings from the past researches, the hypothesis developed is as follows:

H4: There is a positive relationship between the sleep and academic performance.

2.4.5 Racial Ideology

The hypothesis on the relationship between racial ideology and academic performance is formed based on several past researches. A study by Bankston III and Zhou (2002) showed a negative relationship between racial ideology and academic performance. They found that Asians show the lowest level of self-esteem and has the highest GPA among the major

ethnic group. Aside from that, Lee et al. (2011) also found a significant relationship between these two variables as the international students face challenges adapting to the new situation and obtain lower CPGA than the locals.

Based on the findings from the past researches, the hypothesis developed is as follows:

H5: There is a negative relationship between the racial ideology and academic performance.

2.5 Conclusion

In conclusion, chapter two discussed the reviews of past researchers' literature in relation to the five independent variables and stress. In addition, a proposed theoretical framework and hypotheses has been developed in this chapter. For the research methodology, it will be further discussed in the next chapter.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter provides an overview of the methodology used in this research. This is basically the procedures and methods adhered for the entire research. Thus, Chapter 3 provides a detailed discussion of the research design, data collection method, analysis technique and also the constructs.

3.1 Research Design

The objective of this research is to analyze the factors influencing the academic performance of students in tertiary education at Kampar. The primary data collection method undertaken is survey whereby the primary data is collected using self-administered questionnaires. This method is preferred since it is quick, cost effective and information can be obtained directly from targeted individuals (Campanelli, 2008). Besides that, it allows many respondents to complete questions within short time period (Noelle, 2003). A cross-sectional survey is used to gather data about the factors influencing performance of undergraduates in Kampar at a single point of time which is less than one year. The unit analyses are individual undergraduates from different courses.

3.2 Data Collection Method

Primary and secondary data has been used to collect data throughout the whole research. These data collected through these two methods assist by providing reliable information and better understanding on the variables. Primary data is

obtained through the target respondents while, information obtained from journals and articles are deemed to be the secondary data.

3.2.1 Primary Data

Primary data is defined by Zikmund (2003) as data collected and grouped together particularly for the research project at hand. The self-administrative questionnaires are used in collecting primary data as it consumes less cost, time and additional skill. Primary data is obtained upon the completion of questionnaires by undergraduates.

3.2.2 Secondary Data

Secondary data is the data collected and assembled previously for some projects other than the one at hand (Zikmund, 2003). Secondary data is used to review the literature for a better understanding on the factors that affect undergraduate's academic performance. Journal article are the most obvious type of secondary data used in this study.

3.3 Sampling Design

3.3.1 Target Population

This research analyses the factors influencing the academic performance of tertiary education students in Kampar. Therefore, the population involves full time undergraduate students in different faculties and different year of studies in UTAR and KTAR.

3.3.2 Sampling Frame and Sampling Location

There is no sampling frame for this research study because the list of names of the students cannot be obtained as it is deemed to be private and confidential. As for the location, questionnaires are distributed to Undergraduates of UTAR and KTAR in Kampar, Perak. There are limited researches focusing on this location. Most researches focus on Kuala Lumpur because it has large number of Universities (Ministry of Higher Education, 2010).

3.3.3 Sampling Elements

The sampling elements for this research are the undergraduates who are pursuing their degree and diploma programmes in UTAR and KTAR respectively. Questionnaires were distributed randomly to these students.

3.3.4 Sampling Technique

Sampling technique consists of probability and non-probability sampling. In this research, non-probability sampling is selected as target respondents' identity is undefined and therefore there will be no sampling frame of target respondent. Due to the limitation of resource and time, the current research has applied convenience sampling. Convenience sampling is more suitable method to conduct this study as it is the easiest way to reach respondents and collect information within a short period of time (Saunders, Lewis, & Thornhill, 2009).

3.3.5 Sampling Size

Determining a sample size is an act to choose a number of target respondents that will replicate the population (Schwerdt & Wuppermann, 2008). Thus, for this research the sample size would be 375 undergraduates. Within that 375 samples 315 will be from UTAR and 60 from KTAR (Sekaran & Bougie, 2010). This sample size is chosen based on the total population which is about 13,000 in UTAR and 2,500 in KTAR.

3.4 Research Instrument

This research used questionnaires as the research instrument since it is deemed to be one of the efficient methods to collect data (Zikmund, 2003). Besides being efficient it is also deemed as a method which is cost efficient. Questionnaires also allow researchers to evaluate variables in easier manner and understand the needs of the research clearly (Sekaran & Bougie, 2010).

The pilot test was also conducted to ensure the questions are well designed and reliable.

3.4.1 Questionnaire Designing and Procedures

For this research, self-administered questionnaires are used by distributing them to the target respondents. The questions were basically adapted from past researches which studied the same topic. Some questions were in negative form and all the questions were in English language.

Before distributing the questionnaires permission was obtained from UTAR and KTAR. After the permission was granted, 375 sets of questionnaires were distributed to the students mainly around the campus (Sekaran & Bougie, 2010). Guidance was provided upon difficulties in understanding. The respondents were observed upon completion of questionnaires to enhance the reliability. All the respondents are required to complete and return the questionnaires on the spot.

3.4.2 Pilot test

A pilot test was conducted after developing the questionnaire to detect weaknesses in designation and to provide proxy data for probability sample selection (Cooper & Schindler, 2008). 30 sets of questionnaires were distributed to respondents in UTAR and KTAR. Then the reliability and accuracy of the questions were tested using SAS. This is to ensure that the questions can be distributed for the actual survey.

3.5 Constructs and Measurement

The constructs that are analyzed in this research include the factors and academic performance of students (Martha, 2009; Kathy & Laura 2009) which comprises teaching method (Arends, 2007; Jefferson & Kent, 2001), time management (George, et al.,2008), attendance of students (Tze & Ya, 2012; Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1993), sleep (Veldi et al., 2005) and racial ideology (Sanders, 1997).

A self-administered questionnaire which is divided into three parts is used to collect the primary data. First part of the questionnaire which uses the nominal and ordinal scales requires the demographic information of the target respondents. The second part of the questionnaire which comprises the dependent and

independent variable uses the 5 Point Likert Scale at an interval measurement. Thus, the respondents require choosing one out of five alternatives: 1: strongly disagree to 5: strongly disagree to state their degree of agreement. The questions will be adapted from the past journals.

3.6 Data Processing

The raw data collected from questionnaire need to be analysed for the purpose of providing useful information in resolving the research questions. Before all data can serve the purpose of being analysed, it has to undergo a series process. Data processing is a process that includes questionnaire checking, data editing, coding, transcribing, and cleaning before the analysis made (Zikmund, 2003).

3.6.1 Questionnaire Checking

Questionnaire checking is a process to discover, correct, and resolve any error or problem that may occur in the questionnaire. The questionnaires are being checked, modified severally to ensure no error, and approved by the supervisor to ensure the questions asked are high quality, appropriate, and comprehensible by respondents.

3.6.2 Data Editing

The purpose of performing data editing is to ensure high accuracy of the data. Missing data is being discarded while extremely contrasting data is being taken out to ensure consistency and prevent undesirable result outcome.

3.6.3 Data Coding

SAS program requires all data to be in code form. Thus, data are coded before being keyed into it. Before distributing questionnaire, data coding are done by assigning code to each option of answers in the questionnaire.

Respondents are required to fill up their demographic profiles in Section A of the research questionnaire. The answer of each question was coded such that first answer is coded as 1 while the second answer is coded as 2 and so on. For instance, the question on gender and the answer is male or female. Male is coded as 1 while female is coded as 2.

Section B requires respondents' opinions regarding five factors that influence academic performance of students. These five factors are known as independent variables include teaching method, time management, attendance of students, sleep, and racial ideology. As for Section C, the questionnaire focuses questions about the academic performance of the respondents which is the dependent variable of the research. Both sections require respondents to respond their level of agreement and disagreement using 5 points Likert scale, except sleep. The code for strongly agree is 5, agree is 4, neutral is 3, disagree is 2, and strongly disagree is 1. While for the questions about sleep, the code for almost every day or night is 5, 3 to 5 nights or days is 4, once or twice in a week is 3, less than once a week is 2, and lastly never is 1.

3.6.4 Data Transformation

Data transformation is a process that changes the original form of the data to a format suitable for performing data analysis in order to satisfy the research objectives. Some questions in the questionnaire were being recoded. For instance, one question of the attendance, which is I seldom

miss the class, is negatively worded scale. It was being recoded back to positively worded scale where strongly disagree that was coded as 1 was recoded as 5, disagree was recoded as 4, neutral was recoded as 3, and so on.

3.6.5 Data Transcribing

After collecting back all questionnaires, the answers in the questionnaire are converted into code data and then being keyed into SAS manually for further analysis.

3.6.6 Data Cleaning

Using SAS, checking process is enhanced to ensure consistency of data. Any extreme data is easily to detect and be replaced with a more consistent data. Moreover, missing data can be identified for ensuring no data is missed out during transcribing process.

3.7 Data Analysis Techniques

SAS software is used to analyze the primary data gathered through questionnaire by generating and tabulating the results into graphs and diagrams. All primary data are summarized by using appropriate descriptive and inferential statistics.

3.7.1 Descriptive Analysis

Descriptive analysis summarizes the quantitative data into tables and charts. The summarization of data is commonly done by calculating mean, median, and standard deviation. For independent variables, descriptive statistics is usually used to analyse the means and standard deviation while respondents demographic are summarized in frequency distribution. The characteristics of the respondents were analysed in terms of their gender, age, and academic performance by using descriptive analysis.

3.7.2 Normality Test

To perform normality test for the purpose of ensuring data is free from outlier, Skewness and Kurtosis were conducted to test on the data collected as recommended by West, Finch, and Curran (1995). For Skewness test, the result should be not more than 2 and can be either positive or negative, whereas for Kurtosis test, the result obtained should be less than 7.

3.7.3 Reliability Test

Reliability test is used to ensure the data collected are reliable and able to produce accurate and consistent result. The degree of reliability is determined by using Cronbach's alpha. The closer to Cronbach's alpha to 1, the higher the internal consistency reliability (Sekaran, 2010). Principally, the result of the data must be >0.7 to be considered as acceptable (Nunnally&Berntein, 1994).

3.7.4 Inferential Analysis

Inferential statistic is used to test the hypotheses, draw inferences for population, and establish the relationship between two variables. For this research Multi Linear Regression (MLR) Analysis and Pearson Correlation is used to test the hypothesis.

3.7.4.1 Multi Linear Regression (MLR)

In this study, Multi Linear Regression (MLR) Analysisis used to study the relationship between multiple constructs that affect academic performance since all variables are measured using interval data. MLR allows simultaneous studies of the impact of two or more independent variables on one single interval scale dependent variable. Due to this, MLR is used to measure the relationship of teaching method, time management, attendance of student, sleeping, and racial ideology which influences academic performance. MLR is used to examine the strength of relationships for the overall regression model. The general form of MLR equation is as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots + \beta_n X_n$$

Where Y= dependent variable

X= independent variable

α = intercept

β= the slope for independent variable

n= number of independent variables in equation

As for this research, the regression equation is

Academic performance= α+ β_1 Teaching Method + β_2 Time management + β_4 Attendance of Student + β_5 Sleep + β_6 Racial Ideology

3.7.4.2 Pearson Correlation

Furthermore, Pearson correlation was also conducted to detect multicollinearity problem where two independent variables are highly correlated. Multicollinearity problem will bring damaging effects on multiple regression (Cooper & Schindler, 2008). The rule of thumb is that correlations at 0.9 or above should be addressed (Saunders et al., 2009).

3.8 Conclusion

In conclusion, this chapter provided a detailed description of methods used on the data collected. Besides discussing the procedures in detail, further justifications were also provided on every method adhered. The coming chapters will examine the pattern and analysis of the result which are collected from the relevant target respondents.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In this chapter, various tests such as descriptive analysis, reliability test, normality test, Kurtosis and Skewness tests and Multi Linear Regression are carried out to prove the relationships between independent variables and the dependent variable. Statistical Analytic System (SAS) version 5.1 has been used in computing the results for all the tests mentioned above.

As discussed in Chapter 3, non-probability sampling and convenient sampling method are used to reach the targeted number of samples. Total 375 of questionnaires are distributed to the undergraduates of UTAR and KTAR in Kampar. Since the questionnaires are collected on the spot hence, all the questionnaires are successfully collected and this shows a response rate of 100%. Out of 375 questionnaires collected, 34 of them are eliminated as they are classified as outlier by SAS. Therefore, only 341 of the questionnaires were usable.

4.1 Descriptive Analysis

Descriptive analysis is the use of statistics to describe the results of an experiment or investigation. It is used to describe the characteristic of the data in a research and provide simple summaries about the sample (Trochim, 2006). This research provides a descriptive analysis on the demographic profile of the respondent and central tendencies measurement of construct.

4.1.1 Demographic Profile of the Respondent

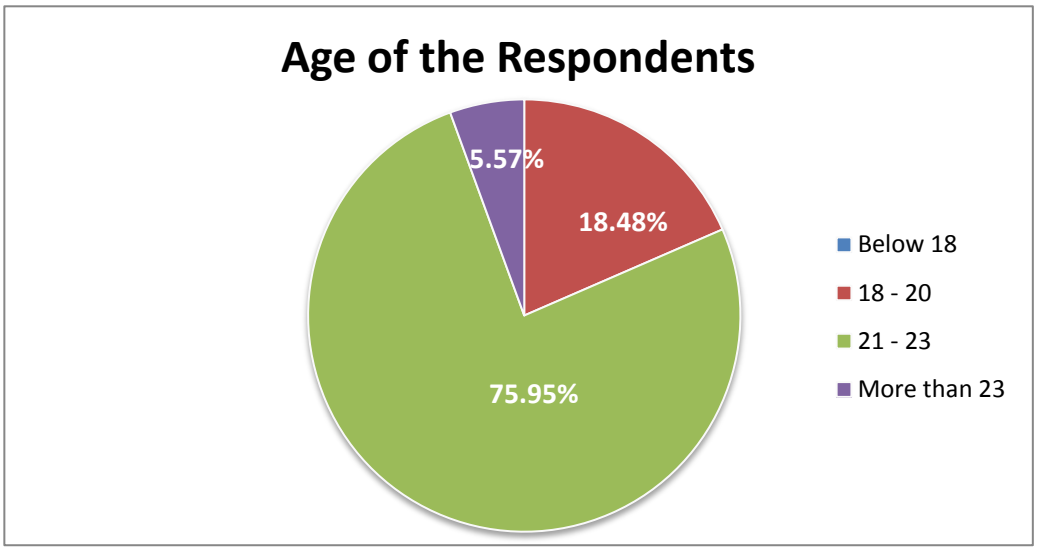
Demographic variable is the statistic of the target respondents. In other words it is their characteristics which measured in terms of income level, gender, educational level, location, ethnicity, and race. As demographic details are provided, respondents are grouped according to the characteristic required for the tests and help to ease the work of elimination. In this research, respondents who are in foundation are eliminated from all the tests. In order to obtain the demographic variable of the targeted respondent, six questions have been included in Section A which are age, gender, race, year of study, family income, and their academic performance in terms of CGPA.

4.1.1.1 Age of the Respondents

Table 4.1: Age of the Respondents

Age	Frequency	Percent	Cumulative Frequency	Cumulative Percentage
Below 18	0	0.00	0	0.00
18 - 20	63	18.48	63	18.48
21 - 23	259	75.95	322	94.43
More than 23	19	5.57	341	100.00
Total	341	100.00		

Figure 4.1: Age of the Respondents



Source: Developed for research

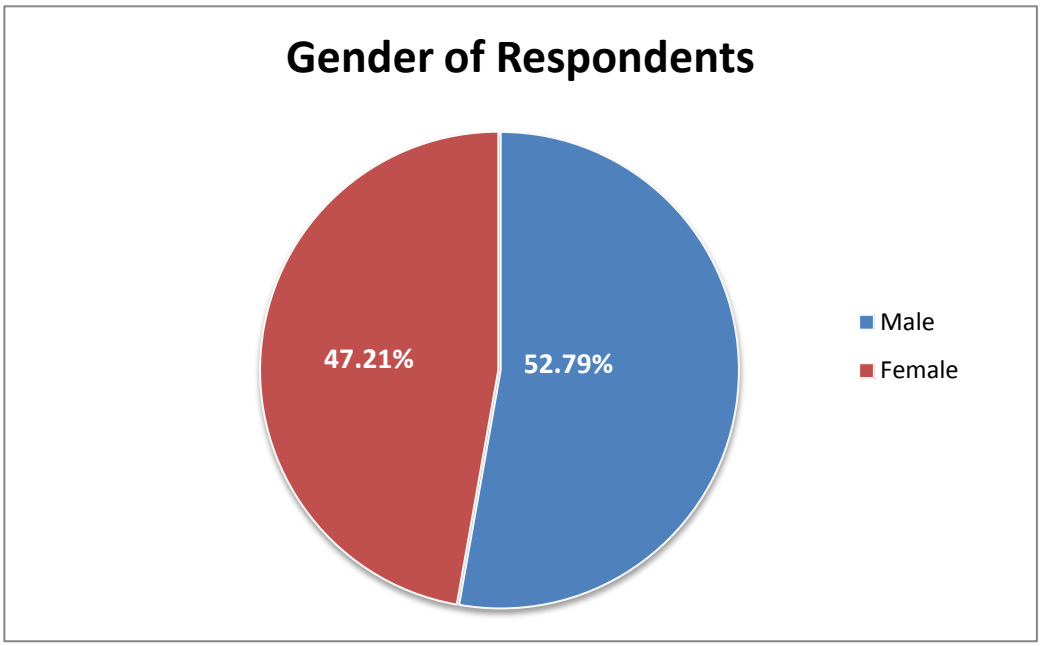
Figure 4.1 shows the frequency of the respondent's age. Respondents who are around 21 to 23 years old have the highest frequency which is 75.95% (259 respondents) and the second highest frequency is age from 18 to 20 which is 18.48% (63 respondents). There are around 5.57% (19 respondents) of the respondents who are more than 23 years old.

4.1.1.2 Gender of the Respondents

Table 4.2: Gender of the Respondents

Gender	Frequency	Percent	Cumulative Frequency	Cumulative Percentage
Male	180	52.79	180	52.79
Female	161	47.21	341	100.00
Total	341	100.00		

Figure 4.2: Gender of the Respondent



Source: Developed for research

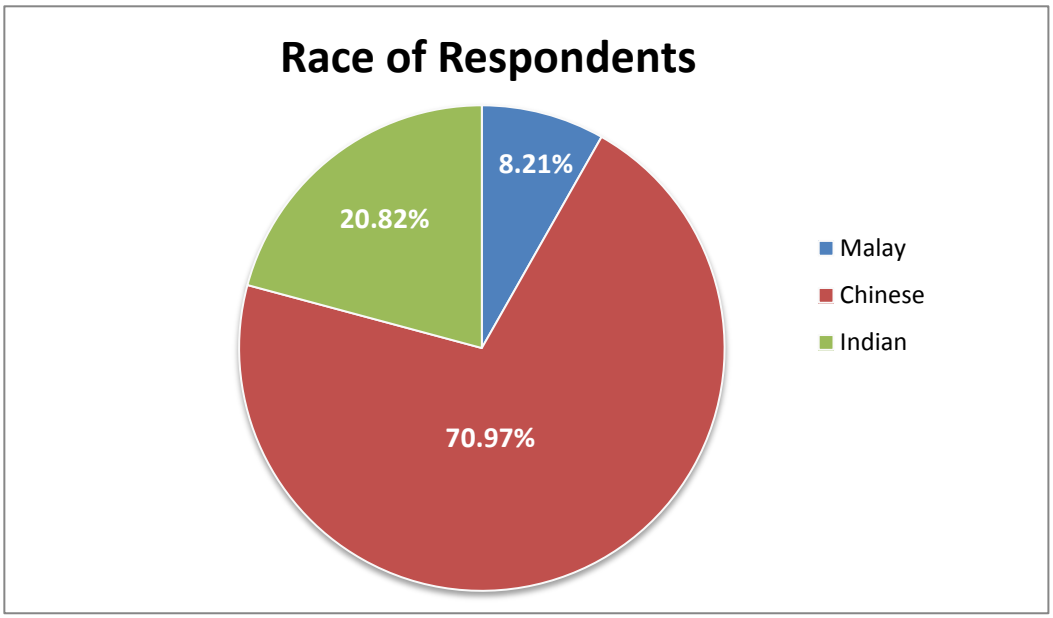
Diagram 4.2 shows the frequency of the respondent's gender. From the pie chart above, most of the respondents are male which consist of 52.79% (180 respondents) and female respondents consist of 47.21% (161 respondents).

4.1.1.3 Race of the Respondents

Table 4.3: Race of the Respondent

Race	Frequency	Percent	Cumulative Frequency	Cumulative Percentage
Malay	28	8.21	28	8.21
Chinese	242	70.97	270	79.18
Indian	71	20.82	341	100.00
Total	341	100.00		

Figure 4.3: Race of the Respondent



Source: Developed for research

Figure 4.3 illustrates the frequency of respondent's race. Since the main population in Kampar is Chinese thus, Chinese has the highest frequency of 70.97% (71 respondents), followed by Indian with the frequency of 20.82% (71 respondents) and Malay has the lowest frequency of 8.21% (28 respondents).

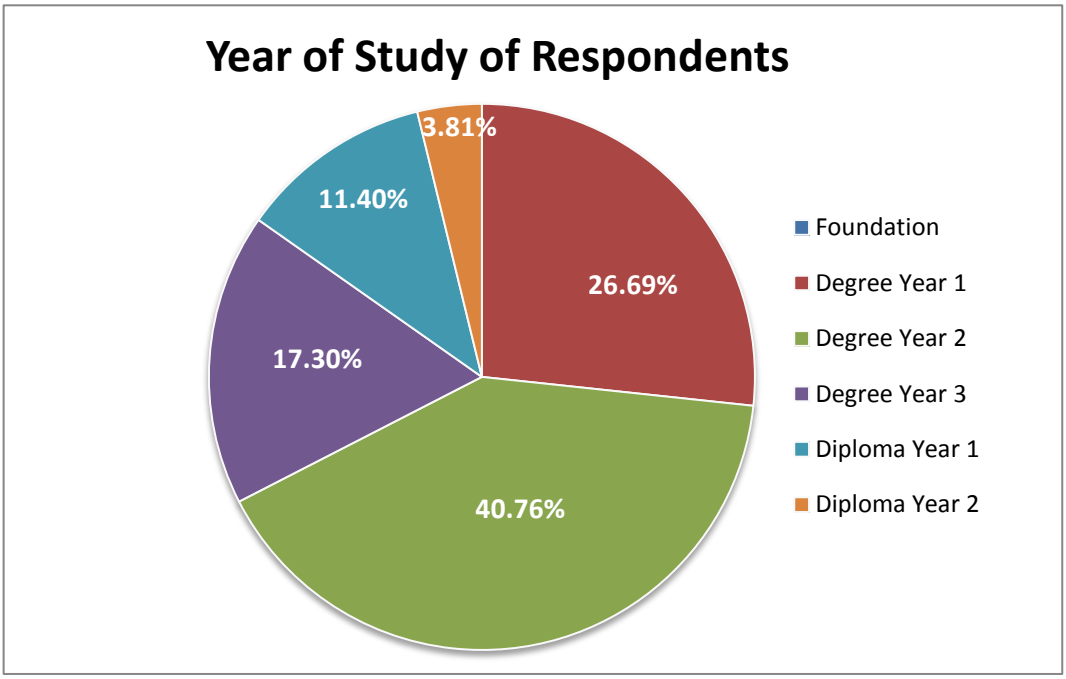
4.1.1.4 Year of Study of the Respondents

Table 4.4: Year of Study of Respondents

Year of Study	Frequency	Percent	Cumulative Frequency	Cumulative Percentage
Foundation	0	0.00	0	0.00
Degree Year 1	91	26.69	91	26.69
Degree Year 2	139	40.76	230	67.45
Degree Year 3	59	17.30	289	84.75
Diploma Year 1	39	11.44	328	96.19
Diploma Year 2	13	3.81	341	100.00

Total	341	100.00		

Figure 4.4: Year of Study of Respondents



Source: Developed for research

Figure 4.4 shows the number of respondents in different year of study in degree and diploma. Respondents from degree year 2 have the highest frequency of 40.76% (139 respondents). Second highest is Degree Year 1 which consists of 26.69% (91 respondents) followed by Degree Year 3 which is 17.30% (59 respondents). The second lowest frequency is Diploma Year 1 which is 11.40% (39 respondents) and the lowest is Diploma Year 2 with the frequency of 3.81% (13 respondents).

4.1.1.5 Academic Performance of the Respondents

Table 4.5: Statistic of Academic Performance

Mean	Standard Deviation	Minimum	Maximum	Mode	N
2.740	0.6173	1.3000	4.0000	2.5000	341

Source: Developed for research

The academic performance of the respondents is measured in CGPA. The academic performance of the respondents has a normal range which is from 1.3000 to 4.0000. The average mean is 2.740 whereas the standard deviation is 0.6173. Besides that, the mode is 2.5000 and this explains that most of the respondents obtained CGPA of 2.5000.

4.1.2 Central Tendencies Measurement of Constructs

Measure of central tendency is a single value that describes on set of data by identifying the central position within a set of data. It is a useful starting point to summarize the variables. Central tendencies include mean, median and mode. Mean is the average of a sum of numbers and most familiar application of central tendency measurement. Median of a list of numbers is found by arranging them from the least to the greatest and the number in the middle of the arrangement is the median. Mode is the number which occurs with the highest frequency. In a histogram, it is normally the highest or longest bar. Standard deviation measures the amount of variability around an average whereas range is the differences between the highest and lowest values in a set of data.

All the mean, median, mode, standard deviation and range of all the items in the independent and dependent variables were generated with SAS. They were measured with 5-point Likert scales with 1 as strongly disagree,

2 as disagree, 3 as neutral, 4 as agree and 5 as strongly agree. In the sleep variable the measurement used were different as point 1 is never, 2 is less than once a week, 3 is once or twice a week, 4 is 3 to 5 nights/days and 5 is almost every day/night.

Appendix 4.1.2 shows the means, standard deviations, mode, and median of all independents variables and dependent variable. For teaching method, the mean ranges from 2.9472 to 3.4135 whereas the standard deviation ranges from 0.8655 to 1.5273. The mode for teaching method ranges from 2.0000 to 4.0000 while the median ranges from 3 to 4.

Second, the mean for time management ranges from 2.8886 to 3.0117 and standard deviation is 0.9517 to 1.1417. Its mode ranges from 2.0000 to 4.0000 and median for all the item in time management is 3.

As for the attendance of students, Appendix 4.1.2 shows that the mean ranges from 3.2551 to 3.8270. The standard deviation and mode range from 0.8450 to 1.0840 and 3.0000 to 4.0000 respectively. Its median ranges from 3 to 4.

Next, the mean of sleep ranges from 3.1642 to 3.7243 and the standard deviation ranges from 1.1036 to 1.1505. The ranges of sleep's mode and median are from 3.0000 to 5.0000 and 3 to 4 respectively.

Racial ideology's mean and standard deviation range from 2.3138 to 2.7361 and 0.8649 to 1.0400 respectively. Its mode and median are the same which ranges from 2.000 to 3.000.

Lastly, the mean for academic performance ranges from 3.1642 to 3.4076 whereas the range of its standard deviation is from 0.9728 to 1.2612. As for the mode, it ranges from 3 to 4 and the median for all the item is 4.

4.2 Scale of Measurement

Reliability test is to ensure that the measurements are free from biasness and affirms its consistency regardless over the time and with different items (Sekaran & Bougie, 2010). It has been carried out using SAS software.

Table 4.7: Reliability Test

Variable	Number of Items	Reliability
Academic Performance	5	0.8523
Teaching Method	5	0.8268
Time Management	5	0.9347
Attendance of Student	4	0.7554
Sleep	5	0.8854
Racial Ideology	5	0.8978

Source: Developed for the research

The results of reliability test are shown in the table above. The range of Cronbach's alpha of variables is from 0.7554 to 0.9347. Time management has the highest Cronbach's alpha, which is at 0.9347 while attendance of student has the lowest Cronbach's alpha of 0.7554. On the other hand, academic performance which is the dependent variable in this study has a solid value of 0.8523 Cronbach's alpha. Since the result shows that all variables have Cronbach's alpha which is more than 0.7, the items can be concluded as stable and highly reliable.

4.3 Inferential Analysis

4.3.1 Normality Test

Normality test is used to determine whether the data is normal and consistent. Skewness and Kurtosis is adopted perform the normality test in this research. As refer to Appendix 4.3.1, results computed shows that the data is normal and acceptable. The results obtained shows that all items of the variables in Skewness test is less than 2 and they are either positive or negative while in Kurtosis test neither of them are more than 7. This indicates that the result of Skewness is less than 2 and the result of Kurtosis is less than 7. These results meet the most stringent demand of multivariate normality of the variance (West et al., 1995).

4.3.2 Pearson's Correlation

Table 4.9 Pearson's Correlation

Variable	Teaching Method	Time Management	Attendance of Students	Sleep	Racial Ideology
Teaching Method	1				
Time Management	0.8738	1			
Attendance of Students	0.7089	0.7088	1		
Sleep	0.6038	0.6213	0.6400	1	
Racial Ideology	-0.2983	-0.3268	-0.1984	-0.3693	1

Source: Developed for the research

As shown in the table above, there is no multicollinearity problem between all independent variable since none of the correlation between independent variables is at 0.9 or above. For the detailed of the result, refer Appendix 4.3.

4.3.3 Multiple Linear Regressions

Table 4.10 Model Summary

Model	R Square	Adjusted R Square	F Value	Pr > F
1	0.7504	0.7467	201.42	<0.0001

a. Predictors: (Constant), Teaching Method, Time Management, Attendance of Student, Sleep, Racial Ideology

b. Dependent variable: Academic Performance

Source: Developed for the research

Table 4.10 above shows the value of R Square at 0.7504 which means that 75.04% of the academic performance is significant by the teaching method, time management, attendance of student, sleep, and racial ideology. In other words, the result shows that 75.04% of the variances in the academic performance were explained by the five independent variables. The remaining 24.96% of the variation in academic performance would be explained by the other factors which are not taken into account in this study.

F statistic is used to detect overall statistical significance of the regression model. The table 4.10 indicates that F value is significant at 201.42. The large F value shows that the model is good and well fit. The variation in Academic Performance is well explained by the overall regression model with predictors of teaching method, time management, attendance of students, sleep, and racial ideology. Based on the table, the p value is equal

to <0.0001 which is less than 0.05. It is an indication that the dependent variable which is the academic performance is predictable by using the independent variables as shown in the table.

Table 4.11 Multiple Linear Regressions

Model	Unstandardized Coefficients		T	Sig. (Pr> t)
	B	Std. Error		
1 (Constant)	0.70498	0.16279	4.33	<0.0001
Teaching Method	0.18011	0.06247	2.88	0.0042
Time Management	0.34024	0.05391	6.31	<0.0001
Attendance of Students	0.17411	0.05073	3.43	0.0007
Sleep	0.20053	0.03473	5.77	<0.0001
Racial Ideology	-0.14305	0.03177	-4.50	<0.0001

a. Dependent Variable: Academic Performance

Source: Developed for the research

Hypothesis 1

H1: There is a positive relationship between teaching method and academic performance.

Table 4.11, shows that teaching method has a beta value of 0.18011 which indicates that teaching method has a positive relationship with academic performance. Since the significant value 0.0042 is lower than 0.05, hypothesis is supported. There is sufficient evidence to support H1. This indicates that there is a positive relationship between teaching method and academic performance.

Hypothesis 2

H2: There is a positive relationship between time management and academic performance.

Table 4.11 shows that the beta value of time management is 0.34024. Thus, time management is positively related with academic performance. As its p-value <0.0001 is lower than 0.05, hypothesis is supported with sufficient evidence. This shows that there is a positive relationship between time management and academic performance.

Hypothesis 3

H3: There is a positive relationship between attendance of students and academic performance.

The beta value of attendance of students which is 0.17411 has indicated that attendance of students has a positive relationship with academic performance. Furthermore, the p-value in table 4.11 is 0.0007 which is lower than 0.05. Thus, hypothesis is supported with sufficient evidence. This depicts that there is a positive relationship between attendance of student and academic performance.

Hypothesis 4

H4: There is a positive relationship between the sleep and academic performance.

The result in table 4.11 shows that sleep has a positive beta value of 0.20053 and p-value of <0.0001 which is less than 0.05. The positive beta value depicts that sleep is positive related with academic performance. Since the significant value is lower than 0.05, hypothesis is supported.

There is sufficient evidence to support H4. This indicates that there is a positive relationship between the sleep and academic performance.

Hypothesis 5

H5: There is a negative relationship between the racial ideology and academic performance.

As referred to the table 4.11, racial ideology has a beta value of -0.14305 which proves that racial ideology has a negative relationship with academic performance. Moreover, its p value is at <0.0001 which is lower than 0.05. As the significant value is less than 0.05, hypothesis is accepted and supported with sufficient evidence. This shows that there is a negative relationship between racial ideology and academic performance.

Regression Equation for External Factor

$Y= \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X5$

Where Y =Academic performance,

X1 = Teaching Method

X2 = Time management

X3 = Attendance of Student

X4 = Sleep

X5 = Racial Ideology

$Y= \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5$

$= 0.70498 + 0.18011\ X_1 + 0.34024X_2 + 0.17411X_3 + 0.20053\ X_4 - 0.14305X_5$

This equation indicates that an increment in teaching method will lead to a growth in academic performance by 0.18011. Increase in time management, attendance of student, and sleep will also improve academic

performance by 0.304024, 0.17411, and 0.20053 respectively. However, a drop in racial ideology will increase the academic performance by reducing 0.14305.

4.4 Conclusion

In this chapter, all the data have been interpreted into charts and diagrams by using SAS. Normality test and reliability test have been performed and they have indicated that all the variables are acceptable. Pearson Correlation have been conducted in order to examine the relationship between the external factors (independent variables) which are teaching method, attendance of students, time management, sleep, and racial ideology.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.0 Introduction

This chapter discusses and summarizes the entire research which analyses the factors influencing tertiary education student's academic performance. It includes summarized statistical analysis, major findings of the research, managerial implications, and limitations of the study as well as the recommendations for the future research. Besides that, brief conclusion of the entire research study is also provided.

5.1 Summary of Statistical Analyses

5.1.1 Summary of Descriptive Analyses

Table 5.1 Summary of Descriptive Profile

Profile	Category	Frequency	Percentage
Gender	Male	180	52.79
	Female	161	47.21
Age	18 to 20	63	18.48
	21 to 23	259	75.95
	More than 23	19	5.57
Race	Malay	28	8.21
	Chinese	242	70.97
	Indian	71	20.82
Year of study	Degree : Year 1	90	26.69

	Year 2	139	40.76
	Year 3	59	17.30
	Diploma : Year 1	39	11.44
	Year 2	13	3.81

Source: Developed for the research

Table 5.1 depicts the demographic profile of the target respondents, which are undergraduates in Kampar, Perak. Total number of 341 samples has been used to compute the result in chapter 4. It was found that majority of the respondents were Chinese male aged from 21 to 23. Result also indicates that 40.76% of the respondents pursuing their second year degree. The average of CGPA among all the respondents is 2.7.

Table 5.2 Summary of Results

	Hypothesis	Statistics	Results P value	Hypothesis
a.	There is a positive relationship between teaching method and academic performance.	MLR	0.0042	Supported
b.	There is a positive relationship between time management and academic performance.	MLR	<0.0001	Supported
c.	There is a positive relationship between attendance of studentsand academic performance.	MLR	0.0007	Supported
d.	There is a positive relationship between sleep and academic performance.	MLR	<0.0001	Supported
e	There is a negative relationship between the racial ideology and	MLR	<0.0001	Supported

	academic performance.			

Note: MLR – Multiple Linear Regressions

Source: Developed for the research

5.1.2 Summary of Inferential Analyses

The result of the multiple linear regression implies that four independent variables (teaching method, time management, attendance of student, and sleep) are positively and significantly correlated with the dependent variable (academic performance). While, the result also indicates that there is a significant negative relationship between racial ideology and academic performance. Therefore, all hypotheses are supported by the result.

5.2 Major Findings

5.2.1 The Relationship between Teaching Method and Academic Performance

The findings indicate that the teaching method has a positive relationship with academic performance. The role played by lecturers in the teaching process is essential. The interaction between lecturers and students through questioning able to enhance student's understanding and thus lead to a better academic performance. Several past studies also show same results as this research. Smith et al. (2001) indicated that interactive teaching method which was associated with better gains in test scores was more effective compared to didactic method. Wenglinsky (2000, 2002), found that an emphasis on thinking skills and frequent traditional testing of

students are positively related to student's test scores taking into account student background and prior performance.

As predicted, the findings show that teaching method utilizing technology able to enhance student grades as their learning process is well aided. This is aligning with the research done by Basileand D'Aquila (2002) where computer aided teaching led to positive learning attitude. A study by Akinfe, Olofinniyi, and Fashiku (2012) revealed that teaching methods adopted by the teachers significantly influence student's achievement. Several schools in the population of the study were unable to conduct effective teaching and learning due to the lacking of modern instructional materials, and thus incurred negative impact on student's academic performance.

5.2.2 The relationship between Time Management and Academic Performance

Time management has a positive significant relationship with academic performance. The result indicates that good time management practices, good organization of study time and leisure activities able to improve academic performance. This finding is consistent with the result obtained in George et al. (2008) which discovered that poor time management and excessive amount of passive leisure causes lower personal success. Indeed, time management skills were the greatest predictor of GPA and thus time management practice was considered as the central to academic success.

The result suggests that the ability to follow the weekly plan able to avert time wasting and enhance grades. This finding aligns with Ali et al. (2008) who found that the relationship between two variables was significant. It was found that time management was one of the key indicators to determine student's academic achievement where good planning of time

able to reduce academic stress. Intense tension resulted from inadequate time which might indirectly affect academic performance can be prevented.

According to the result, good planning of study time like studying on regular basis and preparing for examinations well in advance lead to better academic result. The result is similar with the result of past studies by Zulauf and Gortnet (2000) and Mercanoilglu (2010) who found that good planning of study time and time management behavior lead to better grades.

5.2.3 The relationship between Attendance of Students and Academic Performance

The result is in line with the hypotheses developed where high academic performance could be obtained through more regular class attendance. The finding indicates that regular attendance has a strong impact on grades. The result was supported by many researchers who have explored the impact of a student's class attendance on his or her exam performance. Most studies found out that attending lecture yielded a positive and significant impact on exam performance (Marburger, 2001; Bratti & Staffolani, 2002; Kirby & McElroy, 2003; Rodgers, 2001; Rocca, 2003). Hence, increasing class attendance could be substantially beneficial for students' academic performance.

As predicted, most of the good performing students attend classes on high frequency basis where their main purpose is to obtain important material which deemed to be significant in exam preparation. The result established supported by Shinoff and Catania (2001) and Williams and Worth (2002) who observed a direct positive relationship between attendance of students and academic performance. The researchers concluded that class attendance would be a requirement for significant

improvement in students' exam scores as regularly attending class can be expected to provide students with access to course material which will likely to be included in the exams and thus enhance test scores.

5.2.4 The Relationship between Sleep and Academic Performance

The finding indicates that the relationship between sleep variable and academic performance is significantly positive. Thus, contrary to Nihayah et al. (2011) which pointed out that sleeping hours did not affect students' academic achievements CGPA, the result developed provides the evidence that students having a good sleep quality will be useful for the improvement of academic achievement. The result supports the hypotheses and it is in line with Buboltz, Loveland, Jenkins, Brown, Soper, and Hodges (2006) who highlighted the importance of sleeping habits. He claimed that lower sleep quantity and quality were associated to poorer mental health whereit might lead to the decline of academic grade.

The finding of this research confirmed the result of the past studies that there was a positive relationship between sleep quality and academic performance. As found by Fallone, Owens, and Deane (2002), Trockelet al. (2000), Wolfson andCarskadon (2003), students who sleep poorly for instances with an elevated sleep fragmentation and with later bedtimes and early awakenings, usually tend to offer a decreased academic performance. A shift delay in the bedtime of college students can impair the students' academic performance as well.

The result of this research is further consistent with past studies by Howell, Jahrig, and Powell (2004), Soomroet al. (2011), Veldi et al. (2005) which suggested that good sleeping habits, both in quantity and quality has a significant positive relationship with academic performance.

5.2.5 The Relationship between Racial Ideology and Academic Performance

The result shows that the relationship between racial ideology and academic performance is significantly negative. It implies that, the existence of racism among students will incurred a negative impact on students' academic performance.

The finding is consistent with the previous research conducted by Codjoe (2001) who proposed that racism bring an impact on black students' academic performance. He had highlighted the issue of systemic racism in Canadian society as a significant barrier that stands in the way of Black academic achievement. Indeed, to address the chronic underachievement of Black students, the issue of racism must be tackled aggressively by educational institutions and school administrators.

The result of the finding implies that the racial diversity has a negative impact on minority races' academic performance. Indians and Malays who constitutes a minor portion among all students facing discrimination matter which tend to lead to a lower academic performance. The finding further is in line with Lee et al. (2011) who found that racial diversity incurred certain impact on academic performance. According to the survey, chinese students who constitute the majority of students score higher cgpa compared with other races.

As found by Massey and Fischer (2005), the theory of racial diversity was developed to account for persistent minority underachievement in American colleges and universities. Members of minority groups underperform academically because of unconscious fears of living up to negative group stereotypes.

Robinson and Biran (2006) pointed out that racial inequality seems to hinder African Americans from excellent in their academic. The negative stereotypes of the African students make them become victims of self-hate and display feelings of inferiority. African Americans have personality deficits from the emotional scars of being discriminated against and living in poor conditions. The lack of African role models in the schools other than the lack of emphasis on African contributions to the subject areas has leads to a low academic performance.

5.3 Implications of the Study

5.3.1 Managerial Implication

This research provides an in-depth study on the factors influencing academic performance of tertiary education students. The results show that, teaching method, attendance, time management, and sleep positively influence academic performance. The racial ideology negatively influences the academic performance of tertiary educational students in Kampar. Thus, this study has a managerial implication rather than theoretical implication. It will help the higher educational institutions to improve their students' academic achievement.

In terms of that, by using this research study as a source of reference the Tertiary educational institutions can structure their delivery mode and facilities. So, they can provide a better studying environment and help students to improve their achievements as well. They can prepare a better facility for the students in terms of technological apparatus and also seminars that will emphasize on how to manage time and so on.

Besides that, by referring to teaching method factor it can be said it has both significant and positive effect on student's academic performance. This show how important is teaching factor to enhance student performance. Therefore, lecturers themselves can improve their delivering mode, lecturing style and be well prepared upon attending classes. They can also use massive usage of technology to deliver lectures and also communicate with students. This will help students to attain much better results.

Next, upon looking at the racial ideology it is possible that some students may face difficulties as being the minority or by coming from a totally different culture. Thus, by using this study as reference the management of higher education can try to seek a solution to this matter. This can be done in several ways. They can obtain assistance from the student representatives to look into this matter.

Thus, this study can help the lecturers, management and also tertiary educational institutions as whole. It can be used by future researchers and students for reference purpose.

5.3.2 Theoretical Implications

The Production Function Approach has illustrated that various inputs would yield output. Thus, for this research the all the independent variables are the inputs and the academic achievement is the output. Based on the findings and result obtained, it is easier to see the relationship between the inputs and also output. Besides that, it is possible to see which input yields a better output which is the academic performance.

Therefore, the proposed conceptual model is accepted based on the results and findings. As a wrap up H1, H2, H3, H4, and H5 are also accepted. All

five variables are accepted, hence it is proven that the hypothesis supports the Production Function Approach. Thus, this model has been fully supported in this research.

5.4 Limitations of the Study

In the course of completing this research, several barriers were encountered. They were deemed to be the obstacles that interrupted the progress of this research. Thus, these barriers will be regarded as the limitations of the entire research study.

The first limitation would be the failure of collecting data from foreign students. The target respondents of this research are Tertiary educational students which comprises UTAR and KTAR students. In UTAR, the tertiary educational students cover the local students as well as those expatriate students. So, this research should collect data from both groups of students. Although efforts were made to collect data from them by distributing questionnaires, the replies were not overwhelming. Upon distributing 15 questionnaires to foreign students, only 2 were fully answered while about 6 were not complete. The rest of the questionnaires did not turn up. This is because, most of them were unable to understand the questions and comprehensively answer them as they were still undergoing the Basic English class under Centre of Extension Education.

Next, usage of questionnaires as a mode to collect data can be deemed as one of the limitations for this research. Here, it cannot be regarded that usage of questionnaires is totally a wrong method but, just that it may not be the best method. This is because, respondents may answer the questions inattentively as they are just obliged to answer the questions upon request. This may lead to outliers and deficiencies in the data obtained. Other than that, some may also perceive that information requested in the questionnaire such as CGPA to be private and confidential, thus refrain from providing the exact one. So, this may disrupt the reliability and accuracy of the data.

Lastly, this research has only aimed on those tertiary educational students in the region of Kampar. Thus, the findings may not be applicable and represent other geographical areas in Malaysia as well as other cultural environments. The factors included in this analysis may not be the only ones that affect academic performance. Factors such as family income and financial resources can be also taken into consideration. There could be still other relevant factors that might be implicated to examine the factors influencing academic performance.

5.5 Recommendations for Future Research

Based on the limitations of the study, there are several enhancements that can be proposed to overcome the limitations.

There are past researchers who have studied this particular factor and have found that it can affect academic performance in several ways. Thus, future researchers can study on this factor to identify its relationship towards tertiary educational student academic performance. This can be done by adopting questions which are more reliable.

Since this study has failed in collecting data from the foreign students, future researches should take this matter into heavy consideration. It is important to collect data from expatriate students as it will be very useful in term of the racial ideology variable. They may have totally different perceptions compared to the locals. If obtaining data is cumbersome through questionnaires than other methods can be employed. Even questionnaires can be used, by grouping those students and briefing them about the surveys.

The limitations explain that usage of questionnaires may not be the best way to collect data as respondents may not really exert effort in answering them. Thus, to cope with this matter other means can be utilized. Other methods may comprise

observing, interviewing and so on. Past researchers have used observing method to study how different pedagogical methods can influence student academic performance (Schwerdt&Wuppermann, 2008). However such methods may not be convenient to cover large number of samples.

Future researches must include other factors other than these five factors to strengthen the findings. By analysing more factors and using alternate models a better understanding can be achieved. Besides that, a wider geographical area can be covered such as using the State level to perform the analysis. This will obviously help the result to replicate or represent a wider student community.

5.6 **Conclusion**

This study has discovered that teaching method, attendance, time management, and sleep positively influence the academic performance of Undergraduates. The racial ideology has a negative relationship with the academic performance. Thus, throughout the process of completing the research an in-depth understanding on the variables and their influence on the dependent variable was obtained. The findings further reveal that, all five hypotheses were further supported by the multiple linear regression model.

As a wrap up, this research was conducted in relation to the Production Function Model and the hypotheses have been reasonably achieved. Besides, it also contributes to the Higher Educational Institutions and the instructors. However, it still has some limitations which need further investigation and analysis.

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APPENDICES

Appendix 2.1: Summary of Past Empirical Studies

1. Summary of Past Empirical Studies on the relationship between teaching method and academic performance.

Study	**County**	**Data**	**Major Findings**
Beets & Lobingier, 2001	USA	Data were collected from 275 psychology students, 225 women and 45 men from two educational institution using survey questionnaires.	Basic pedagogical techniques such as using the chalkboard, overhead projector and also computer projected software have no impact on student study behavior.
Smith, Lee & Newmann, 2001	USA	Mail surveys of 300 were given out to all schools on the SIPA sample.	Interactive teaching method associated a better gain in test scores.
Basile & D'Aquila, 2002	Australia	Secondary data of 94 student records, from three separate classes, were accessed from a 2nd year, undergraduate marketing course.	Tertiary institutions need to increase student exposure to technology.
Smith, Lee & Newmann, 2001	USA	Observe 50 students from Chicago higher education institution and participate in activities with them.	Interactive teaching method associated a better gain in test scores.
Friedlan, 2005	USA	Observe 32 students in a Law School situated in Seattle and studied which	Interactive learning created changes over student learning

		methods are preferred by students.	attitude compared to the Socratic style.

2. Summary of Past Empirical Studies on the relationship between time management and academic performance.

Study	**County**	**Data**	**Major Findings**
George, Dixon, Stansal, Gelb & Pheri , 2008	Canada	5-day time diary and a 71-item questionnaire assessing the influence of personal, cognitive, and attitudinal factors on success distributed to 231 students in university in central Alberta, Canada.	One of the greatest predictors of GPA was time-management skills where good time management able to reduce stress and lead to better academic achievement.
Ali, Yunus, Hamzah, Abu, Tarmizi, Nor, Abu Bakar & Ismail, 2008	Malaysia	Data was collected using a set of questionnaire on 3025 students from seven public and two private universities.	Findings of this study found that there was a significant relationship between time management and CGPA.
Zulauf & Gortner, 2000	USA	One week time diary and a 34-item questionnaire designed to measure individual time management behavior was collected from 93 students enrolled in three classes at Ohio State University.	Result revealed that time management skill and study time were positively correlated with quarter GPA. This finding suggests that improved time management skills may enhance academic performance.

Mercanoilglu, 2010	Turkey	Data was collected using a set of time management questionnaire distributed to 108 students, 89 of them were proper to analyze. The time management attitudes of master level's students were assessed via their scores on a time management questionnaire.	Result showed that, only in total points of Short range planning and long range planning there is a significant correlation at the 0,01 level. There is no significant correlation between Grades and the other scales which is time attitude.
Plant, Ericsson, Hill, & Asberg, 2005	USA	Questionnaire survey on 88 undergraduate students from Florida State University.	The finding support indicated that the amount of study only emerged as a significant predictor of cumulative GPA when the quality of study and previously attained performance were taken into consideration.

3. Summary of Past Empirical Studies on the relationship between attendance and academic performance.

Study	County	Data	Major Findings
Burn, 2011	USA	Use administrative data (student attendance rate and exam grade) of 276 students enrolled in Introductory Principles of Marketing classes at a medium-sized university located in the USA.	There is a positive correlation between student attendance and exam grades. Students who missed a lesser number of classes were experienced improvement in performance. Regular attendance provides students with access to course material which deemed to be important to be included in the exams
Chen & Lin, 2006	Taiwan	Use of administrative data (attendance rate and midterm and final result) of 114 students who attended the Public Finance course at Tamkang University in Taiwan.	Result showed that class attendance has produced a positive and significant impact on students' exam performance. On average, attending lecture corresponds to a 7.66% improvement in exam performance.
Kwenda, 2011	USA	Use of administrative data collected for five consecutive semesters at a	Based on the findings, it was found that an additional day of

		state-supported regional University in the southwestern part of the United Sates. 255 students enrolled in Introductory Sociology Course involved in the study.	missed classes increases the odds of failing the course by 50 percent.
Lin, 2011	USA	Use administrative data (student daily attendance rate for each exam period and exam I, exam II and exam III performance) of 203 students enrolled in Introductory Microeconomic classes at Indiana University.	Results showed that one additional class missed was found to lower test scores by approximately 1.92–2.54 points whereas one additional class missed in the first and second exam periods was found to lower final exam scores by approximately 2.7 and 1.7 points, respectively, and reduce final exam performance by approximately 6.16% and 4.44%, respectively.
Rodgers, 2003	Australia	Use of administrative data (attendance rate and midterm, test-based on tutorial work, final exam) 131 commerce business and	A one-percentage-point increase in attendance, was positive and highly statistically significant.

		economics students who completed an intermediate microeconomics course at a mid-sized Australian university.	The results indicated that strong class attendance has a significant effect on academic performance.

4. Summary of Past Empirical Studies on the relationship between sleep and academic performance.

Study	**County**	**Data**	**Major Findings**
Curcio, Ferrar, & Gennaro, 2006	Italy	Several studies were analyzed to infer a conclusion.	Sleep loss and sleep fragmentation could negatively affect the learning and memory which result in poor academic performance. Sleep quality and sleep habits were associated with academic performance.
Eliasson, Lettieri, & Eliasson, 2010	USA	170 questionnaires were distributed to students in Montgomery College and 157 were returned.	Timing of sleep and wakefulness tended to be more important in affecting academic performance compared to total time of sleep. There is no significant relationship between total time of sleep and academic performance. Earlier bed time and wake times correlated with better academic

			performance.
Veldi, Aluoja, & Vasar, 2005	Estonia	Questionnaire survey on medical students in University of Tartu and out of 515,430 questionnaires were returned.	Finding claimed that waking up due to noise, waking up because of nightmares, feeling tired in the morning, waking up early in the morning, daytime sleepiness, and daytime sleepiness during class were correlated with academic performance. There is a significant relationship between sleep quality and academic performance.
Soomro, Channa, & Dayo, 2011	Pakistan	220 questionnaires were distributed to pharmacy students in University of Sindh Jamshoro. Only 188 questionnaires were successfully completed.	Finding claimed that irregular sleeping habits and poor sleep quality affect students' attitudes towards learning tasks and academic achievements. Sleep quality and sleep habits are positive related with academic performance.
Bahammam, Alaseem,	Saudi Arabia	600 medical students of College of Medicine King Saud University filled up	The result of the study demonstrated that there is a clear association

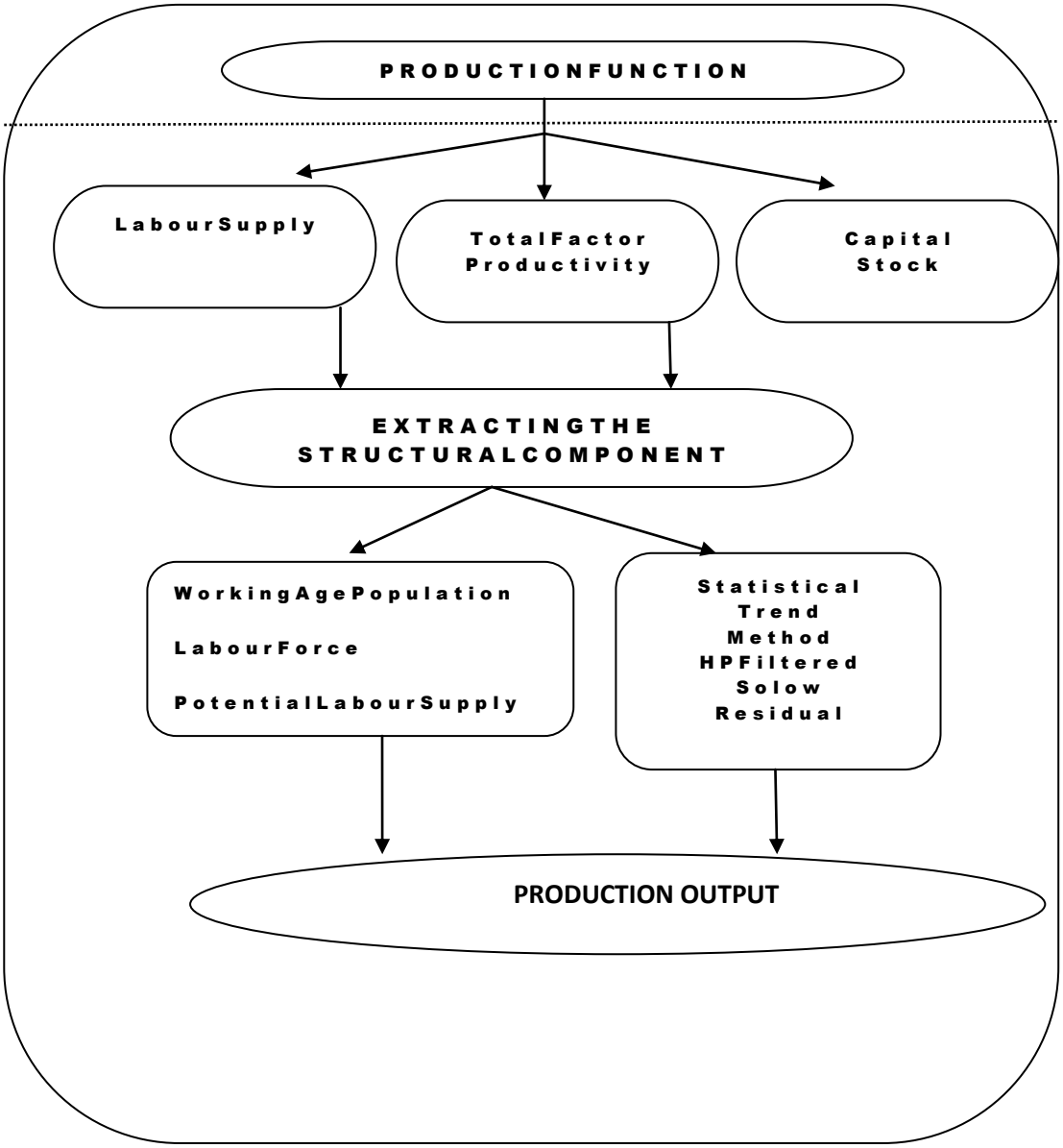
Alzkri, Almeneessier, & Sharif, 2012		questionnaire and recorded their sleep-wake pattern.	between sleep habits and academic performance. Late bed time associated with poor academic performance. Sleep deprivation may impair memory and level of concentration which lead to poor academic performance.

5. Summary of Past Empirical Studies on the relationship between ethnicity and academic performance.

Study	**County**	**Data**	**Major Findings**
Sanders, 1997	USA	Data collected from the interview with 28 African Americans urban eighth-grader.	Positive racial socialization was a primary factor influencing and promoting academic success.
Smalls, White, Chavous & Seller, 2007	USA	Data collected from 390 African Americans adolescent from Grade 7 to Grade 10.	Racial ideologies moderated the relationship between discrimination and academic outcomes.
Lee, Latifah Abdol Latif, Ramli	Malaysia	Data were obtained from 761 learner from various degree program in OUM through self-administer questionnaire.	Chinese learners have higher probability in getting CGPA above 3.00 and gender and mode of entry does not

Bahroom, & Mansor Fadzil, 2011			have significant relationship with academic performance.
Bankston III, & Zhou, 2002	USA	Obtained random samples of 6,504 of interviews of students from seventh to twelfth grades conducted in 1995 by the National Longitudinal Study of Adolesent Health (Add Health) in United States.	They found that Asians show the lowest level of self-esteem and has the highest GPA among the major ethnic group.
Pino, & Smith, 2004	USA	The questionnaires were given to 721 students in Georgia Southern University. Only 675 students completed the survey.	higher percentage of Black had an academic ethic than Whites but had lower GPA than Whites.

Appendix 2.2: Theoretical Framework Model



Source: Adapted from Gordon, W. (2007). The Production Function Approach to Calculating Potential Growth and Output Gaps. *EU Commissions.*

Appendix 3.4: Questionnaire

Analysis of Factor Influencing Academic Performance of Students in Tertiary Education in Kampar, Perak

Survey Questionnaire

The purpose of this research is to examine the factors influencing academic performance of students in tertiary education in Kampar, Perak. Please answer all the questions to the best of your knowledge. There are no wrong responses to any of these statements. All responses are completely confidential.

We are looking for students who are the undergraduates in Kampar, Perak.

Thank you for your participation.

Instructions:

(1) There are THREE (3) sections in this questionnaire. Please answer ALL the questions in ALL the sections.
(2) This will only take you approximately 20 – 30 minutes
(3) The content of this questionnaire will be private and confidential.

Section A: Demographic

Instruction: Please tick the most suitable option given. You are allowed to tick only ONE option for each question unless it is specify.

1. Age
   - ☐ Below 18
   - ☐ 18 -20
   - ☐ 21-23
   - ☐ More than 23

2. Gender
   - ☐ Male
   - ☐ Female

3. Race

i. Local : ☐ Malay ☐ Chinese ☐ Indian
☐ Others:_____*(please specify)*

ii. International: _____ *(please specify which country are you from)*

4. Year of study

i. ☐ Foundation:

ii. ☐ Degree:
- ☐ Year 1
- ☐ Year 2
- ☐ Year 3

iii. ☐ Diploma:
- ☐ Year 1
- ☐ Year 2

5. Family Income:
   - ☐ Less than RM1000
   - ☐ RM1000 - RM1500
   - ☐ RM1500 – RM3000
   - ☐ RM3000 - RM5000
   - ☐ More than RM5000

6. Academic performance (CGPA): _____

Section B: Factors influencing students' academic performance in tertiary education

This section is seeking your opinion regarding the factors influencing students' academic performance in tertiary education. Please indicate [(1) = Strongly Disagree; (2) = Disagree; (3) = Neutral; (4)= Agree and (5) = Strongly Agree] by circling the number corresponding to the statements.

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
B01	**Teaching Method**					
T1	The role played by the Lecturer/ Tutor in the teaching process aided my learning.	1	2	3	4	5
T2	Tutorial classes help me to improve preparations towards examinations oriented.	1	2	3	4	5
T3	I like it when teachers are well organized for a session.	1	2	3	4	5
T4	Technology was essential in the teaching process, which aided my learning.	1	2	3	4	5
T5	I rely on my teachers to tell me what is important for me to learn.	1	2	3	4	5
T6	The questioning methods are likely to enhance the my development on the conceptual understanding/problem solving.	1	2	3	4	5
T7	The instructional methods and activities used reflect the Lecturers attention to my experiences and readiness .	1	2	3	4	5
B02	**FamilyIncome**					
F1	I feel that insufficient family income will affect on my academic performance.	1	2	3	4	5
F2	I feel that there is appropriate financial support for my education activities from my parent income	1	2	3	4	5
F3	I am concerned that my family income might affect the quality of my academic performance	1	2	3	4	5
F4	I feel necessary for parent to provide family income for student to had tutorial classes in improve their academic.	1	2	3	4	5
F5	I have to take loan debt, financial aid and others due to parents poor family income, which might have affect my academic performance	1	2	3	4	5
B03	**Time Management**					
M1	I have very good time management skill.	1	2	3	4	5
M2	I manage to follow well the weekly plan that I have set.	1	2	3	4	5
M3	I find it easy to study on regular basis.	1	2	3	4	5
M4	I always start preparing for an examination well in advance.	1	2	3	4	5
M5	I can organize my study and leisure time easily.	1	2	3	4	5
B04	**Attendance**					
A1	I think it is important to attend all the classes.	1	2	3	4	5
A2	I seldom miss the class	1	2	3	4	5
A3	I attend the class on regular basis.	1	2	3	4	5
A4	I often come late to class.	1	2	3	4	5
A5	I attend the class because I want to obtain important	1	2	3	4	5

	information.					
A6	I attend the class due to mandatory attendance system.	1	2	3	4	5
B05	**Health**					
No.	**Questions**	**Never**	**Less than once a week**	**Once or twice a week**	**3 to 5 nights/days**	**Almost every day/night**
H1	I go to bed at an unusual time (later than usual) at night.	1	2	3	4	5
H2	I have difficulty to sleep at night.	1	2	3	4	5
H3	I wake up because of noise.	1	2	3	4	5
H4	I wake up because of nightmares.	1	2	3	4	5
H5	I wake up too early and have difficulty in getting back to sleep again.	1	2	3	4	5
H6	I feel daytime sleepiness all day long.	1	2	3	4	5
H7	I feel daytime sleepiness during lecture only.	1	2	3	4	5
H8	I have a good sleep quality	1	2	3	4	5
B06	**Ethnicity**					
No.	Questions	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
E1	Discrimination exists around my campus.	1	2	3	4	5
E2	I ever felt racial diversity in my campus.	1	2	3	4	5
E3	Racism is affecting me.	1	2	3	4	5
E4	Racism and racial discrimination affecting my race ability to study in Malaysia.	1	2	3	4	5
E5	Racism and racial discrimination will affect my study goal.	1	2	3	4	5

Section C: Academic Performance

This section is seeking your opinion regarding your academic performance in tertiary education. Please indicate [(1) = Strongly Disagree; (2) = Disagree; (3) = Neutral; (4) = Agree and (5) = Strongly Agree] by circling the number corresponding to the statements.

No.	Questions	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
C01	**Academic Performance**					
P1	I often repeat a year or carry modules over next academic year/ semester.	1	2	3	4	5
P2	Since starting university studies, I have never ever failed an examination.	1	2	3	4	5
P3	I perform poorly in my past semester examinations.	1	2	3	4	5
P4	I am good in most of my modules.	1	2	3	4	5
P5	I am able to achieve the academic goal that I have set.	1	2	3	4	5

********** *Thank you for your cooperation*
****

Appendix 3.5: Summary of Research Questions

Measurement	Variables	Items	Descriptions	References
5 point Likert scale	Teaching methods	T 1	The role played by the Lecturer/ Tutor in the teaching process aided my learning.	Arends (2007) Jefferson and Kent (2001)
		T 2	Tutorial classes help me to improve preparations towards examinations oriented.	
		T 3	I like it when teachers are well organized for a session**.**	
		T 4	Technology was essential in the teaching process, which aided my learning.	
		T 5	I rely on my teachers to tell me what is important for me to learn.	
		T 6	The questioning methods are likely to enhance my development on the conceptual understanding/problem solving.	
		T 7	The instructional methods and activities used reflect the lecturers attention to my experiences and readiness.	

5 point Likert scale	Time management	M 1	I have a very good time management skill.	George, Dixon, Stansal, Gelb, and Pheri (2008)
		M 2	I manage to follow well the weekly plan that I have set.	Sansgiry, Bhosle, and Sail (2006)
		M 3	I find it easy to study on regular basis.	Ali, Yunus, Hamzah, Abu, Tarmizi, Nor, Abu Bakar, and Ismail (2008).
		M 4	I always start preparing for an examination well in advance.	
		M 5	I can organize my study and leisure time easily.	
5 point Likert scale	Attendance of Students	A 1	I think it is important to attend all the classes.	Crisp, Palmer, Turnbull, Nettelbeck, Ward, LeCouteur, Sarris, Strelan, and Schneider (2009)
		A 2	I seldom miss the class.	
		A 3	I attend the classes on regular basis.	Tze and Ya (2012)
		A 4	I often come late to class.	
		A 5	I attend the class because I want to obtain important information.	Vallerand, Pelletier, Blais, Briere, Senecal, and Valliéres (1993)
		A 6	I attend the class due to mandatory attendance system.	

5 point Likert Scales: Interval	Sleep	H 1 H 2 H 3 H 4 H 5 H 6 H 7 H 8	I go to bed at an unusual time (later than usual) at night. I have difficulty to sleep at night. I wake up because of noise. I wake up because of nightmares. I wake up too early and have difficulty in getting back to sleep again. I feel daytime sleepiness all day long. I feel daytime sleepiness during lecture only. I have a good sleep quality.	Veldi, Aluojo, and Vasar (2005)
5 point Likert Scales	Racial Ideology	E 1 E 2 E 3 E 4 E 5	Discrimination exists around my campus. I ever felt racial diversity around my campus. Racism is affecting me. Racism and racial discrimination affecting my race ability to study in Malaysia. Racism and racial discrimination will affect my study goal.	Sanders (1997)

5 point Likert scale	Academic Performance	P 1	I often repeat a year or carry modules over next academic year/ semester.	Martha (2010) Kathy and Laura (2009)
		P 2	Since the starting university studies, I have never ever failed an examination.	Tan and Yates (2007)
		P 3	I perform poorly in my past semester examinations.	Roy (2004)
		P 4	I am good in most of my modules.	
		P 5	I am able to achieve the academic goal I have set.	

Appendix 4.1.2: Central Tendencies Measurement of Constructs

Items	Statement	Mean	Standard Deviation	Mode	Range	Median
T1	The role played by the Lecturer/ Tutor in the teaching process aided my learning.	3.3841642	0.8654725	4.0000000	4.0000000	4
T2	Tutorial classes help me to improve preparations towards examinations oriented.	3.4134897	1.3791493	4.0000000	4.0000000	3
T3	I like it when teachers are well organized for a session.	3.4076246	1.0179856	4.0000000	4.0000000	4
T4	Technology was essential in the teaching process, which aided my learning.	3.0117302	0.9517060	4.0000000	4.0000000	3
T5	The questioning methods are likely to enhance my development on the conceptual understanding/problem solving.	2.9472141	1.5272523	2.0000000	4.0000000	3
M1	I have very good time management skill.	3.0117302	0.9517060	4.0000000	4.0000000	3
M2	I manage to follow well the weekly planner that I have set.	3.0029326	1.0778479	4.0000000	4.0000000	3
M3	I find it easy to study on regular basis.	2.8885630	1.1242846	2.0000000	4.0000000	3
M4	I always start preparing for an examination well in advance.	2.9266862	1.1416798	2.0000000	4.0000000	3

M5	I can organize my study and leisure time easily.	3.0293255	1.0788157	3.0000000	4.0000000	3
A1	I seldom miss the class.	3.2551320	0.9952882	3.0000000	4.0000000	3
A2	I attend the class on regular basis.	3.3548387	0.9456783	4.0000000	4.0000000	3
A3	I often come late to class.	3.2991202	1.0839602	4.0000000	4.0000000	3
A4	I attend the class because I want to obtain important information.	3.8269795	0.8450405	4.0000000	4.0000000	4
H1	I have difficulty to sleep at night.	3.4633431	1.1177601	3.0000000	4.0000000	4
H2	I wake up because of noise.	3.5542522	1.2226374	4.0000000	4.0000000	4
H3	I wake up because of nightmares.	3.7243402	1.1035877	5.0000000	4.0000000	4
H4	I wake up too early and have difficulty in getting back to sleep again.	3.5601173	1.1504700	4.0000000	4.0000000	4
H5	I have a good sleep quality.	3.1642229	1.2934263	4.0000000	4.0000000	3
E1	Discrimination exists around my campus.	2.5923754	0.8649042	2.0000000	4.0000000	2
E2	I ever felt racial diversity in my campus.	2.7360704	0.9239403	3.0000000	4.0000000	3
E3	Racism is affecting me.	2.3137830	0.9873095	2.0000000	4.0000000	2
E4	Racism and racial discrimination affecting my race ability to study in Malaysia.	2.4340176	1.0400303	2.0000000	4.0000000	2
E5	Racism and racial discrimination will affect my study goal.	2.3049853	1.0407598	2.0000000	4.0000000	2

P1	I often repeat a year or carry modules over next academic year/semester.	3.4076246	1.1039237	4.0000000	4.0000000	3
P2	Since starting university studies, I have never ever failed an examination.	3.1642229	1.2611894	4.0000000	4.0000000	3
P3	I perform poorly in my past semester examinations.	3.1788856	1.0233854	3.0000000	4.0000000	3
P4	I am good in most of my modules.	3.2375367	0.9728060	3.0000000	4.0000000	3
P5	I am able to achieve the academic goal that I have set.	3.2140762	1.1470838	4.0000000	4.0000000	3
T1	The role played by the Lecturer/ Tutor in the teaching process aided my learning.	3.3841642	0.8654725	4.0000000	4.0000000	4
T2	Tutorial classes help me to improve preparations towards examinations oriented.	3.4134897	1.3791493	4.0000000	21.0000000	3
T3	I like it when teachers are well organized for a session.	3.4076246	1.0179856	4.0000000	4.0000000	4
T4	Technology was essential in the teaching process, which aided my learning.	3.0117302	0.9517060	4.0000000	4.0000000	3
T5	The questioning methods are likely to enhance my development on the conceptual understanding/problem solving.	2.9472141	1.5272523	2.0000000	21.0000000	3
M1	I have very good time management skill.	3.0117302	0.9517060	4.0000000	4.0000000	3

M2	I manage to follow well the weekly planner that I have set.	3.0029326	1.0778479	4.0000000	4.0000000	3
M3	I find it easy to study on regular basis.	2.8885630	1.1242846	2.0000000	4.0000000	3
M4	I always start preparing for an examination well in advance.	2.9266862	1.1416798	2.0000000	4.0000000	3
M5	I can organize my study and leisure time easily.	3.0293255	1.0788157	3.0000000	4.0000000	3
A1	I seldom miss the class.	3.2551320	0.9952882	3.0000000	4.0000000	3
A2	I attend the class on regular basis.	3.3548387	0.9456783	4.0000000	4.0000000	3
A3	I often come late to class.	3.2991202	1.0839602	4.0000000	4.0000000	3
A4	I attend the class because I want to obtain important information.	3.8269795	0.8450405	4.0000000	4.0000000	4
H1	I have difficulty to sleep at night.	3.4633431	1.1177601	3.0000000	4.0000000	4
H2	I wake up because of noise.	3.5542522	1.2226374	4.0000000	4.0000000	4
H3	I wake up because of nightmares.	3.7243402	1.1035877	5.0000000	4.0000000	4
H4	I wake up too early and have difficulty in getting back to sleep again.	3.5601173	1.1504700	4.0000000	4.0000000	4
H5	I have a good sleep quality.	3.1642229	1.2934263	4.0000000	4.0000000	3
E1	Discrimination exists around my campus.	2.5923754	0.8649042	2.0000000	4.0000000	2
E2	I ever felt racial diversity in my campus.	2.7360704	0.9239403	3.0000000	4.0000000	3
E3	Racism is affecting me.	2.3137830	0.9873095	2.0000000	4.0000000	2

E4	Racism and racial discrimination affecting my race ability to study in Malaysia.	2.4340176	1.0400303	2.0000000	4.0000000	2
E5	Racism and racial discrimination will affect my study goal.	2.3049853	1.0407598	2.0000000	4.0000000	2
P1	I often repeat a year or carry modules over next academic year/semester.	3.4076246	1.1039237	4.0000000	4.0000000	3
P2	Since starting university studies, I have never ever failed an examination.	3.1642229	1.2611894	4.0000000	4.0000000	3
P3	I perform poorly in my past semester examinations.	3.1788856	1.0233854	3.0000000	4.0000000	3
P4	I am good in most of my modules.	3.2375367	0.9728060	3.0000000	4.0000000	3
P5	I am able to achieve the academic goal that I have set.	3.2140762	1.1470838	4.0000000	4.0000000	3

Appendix 4.3.1: Normality Test (Skewness and Kurtosis)

Item	Mean	Standard Deviation	Skewness	Kurtosis
Teaching Method				
T1	3.38416422	0.86547248	-0.4191462	-0.800737
T2	3.35483871	0.94256302	-0.2324285	-0.5660855
T3	3.40762463	1.01798558	-0.5299427	-0.460944
T4	3.01173021	0.95170602	-0.0440607	-0.894367
T5	2.88856305	1.1242846	0.28343629	-0.7884094
Time Management				
M1	3.01173021	0.95170602	-0.0440607	-0.894367
M2	3.00293255	1.07784789	-0.0483758	-1.0588284
M3	2.88856305	1.1242846	0.28343629	-0.7884094
M4	2.92668622	1.14167982	0.07277547	-0.8533348
M5	3.02932551	1.07881572	0.0546159	-0.7829553
Attendance of Students				
A1	3.25513196	0.99528819	0.08266736	-0.8854127
A2	3.35483871	0.94567828	-0.0486837	-0.7373389
A3	3.29912023	1.08396024	0.05200425	-1.0620677
A4	3.82697947	0.84504053	-0.2216545	-0.5035363
Sleep				
H1	3.46334311	1.11776009	-0.3143729	-0.6215553
H2	3.5542522	1.22263738	-0.3887453	-1.0058455
H3	3.72434018	1.1035877	-0.2562498	-1.0874497
H4	3.5601173	1.15046997	-0.3169072	-1.0072738
H5	3.16422287	1.29342627	-0.0953553	-1.2002981
Racial Ideology				
E1	2.59237537	0.86490424	0.53556207	-0.5284968
E2	2.73607038	0.92394031	-0.1722331	-0.6664718
E3	2.31378299	0. 9873095	0.22280355	-0.8247051
E4	2.4340176	1.04003025	0.28737113	-0.7378915
E5	2.30498534	1.0407598	0.37099319	-0.7736001
Academic Performance				

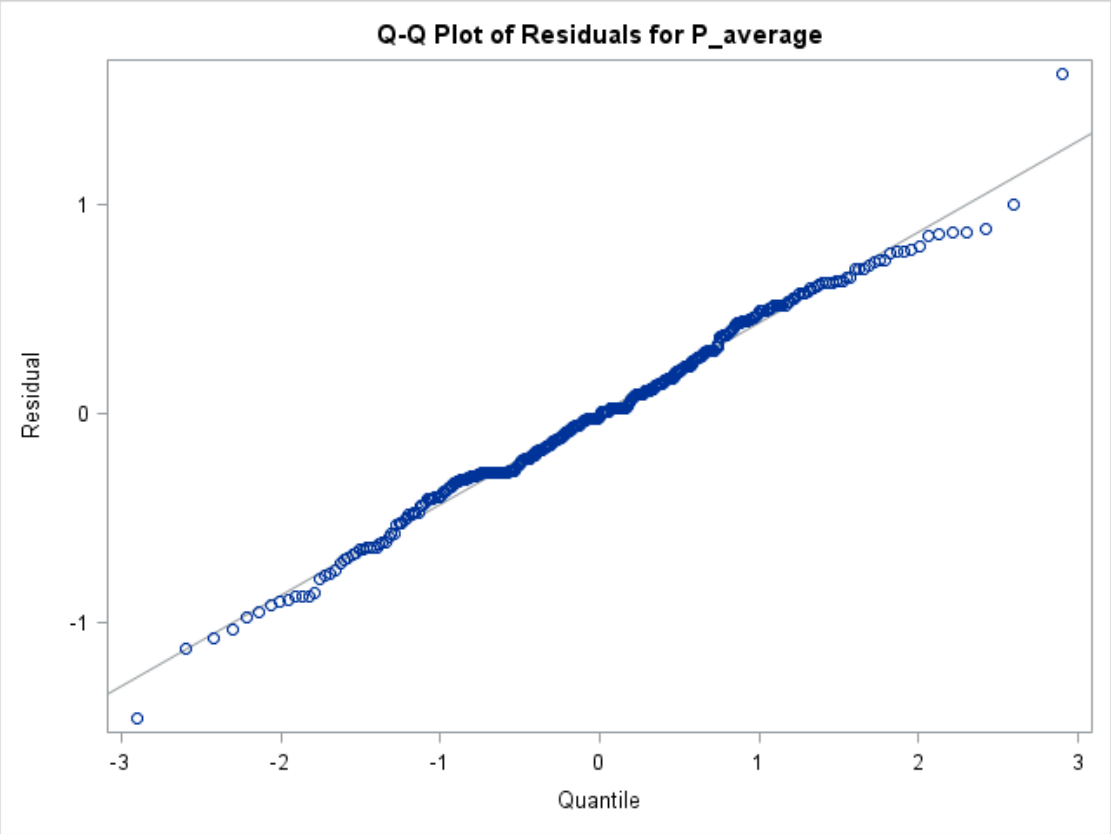
P1	3.40762463	1.10392372	-0.0940842	-0.9983092
P2	3.16422287	1.26118935	-0.0913601	-1.0827072
P3	3.17888563	1.02338535	0.23173076	-0.7390438
P4	3.23753666	0.97280602	-0.0670345	-0.2630029
P5	3.21407625	1.14708381	-0.2267133	-0.8371551

Appendix 4.3.2: Pearson Correlations between 5 Independent Variables

		T	M	A	H	E
T	Pearson Correlation Sig. N	1 341	0.87381 <.0001 341	0.70892 <.0001 341	0.60381 <.0001 341	-0.29827 <.0001 341
M	Pearson Correlation Sig. N	0.87381 <.0001 341	1 341	0.70881 <.0001 341	0.62130 <.0001 341	-0.32676 <.0001 341
A	Pearson Correlation Sig. N	0.70892 <.0001 341	0.70881 <.0001 341	1 341	0.63996 <.0001 341	-0.19843 <.0002 341
H	Pearson Correlation Sig. N	0.60381 <.0001 341	0.62130 <.0001 341	0.63996 <.0001 341	1 341	-0.36930 <.0001 341
E	Pearson Correlation Sig. N	-0.29827 <.0001 341	-0.32676 <.0001 341	-0.19843 0.0002 341	-0.36930 <.0001 341	1 341

Appendix 4.3.3: Normal Q-Q Plot of Standardized Residuals

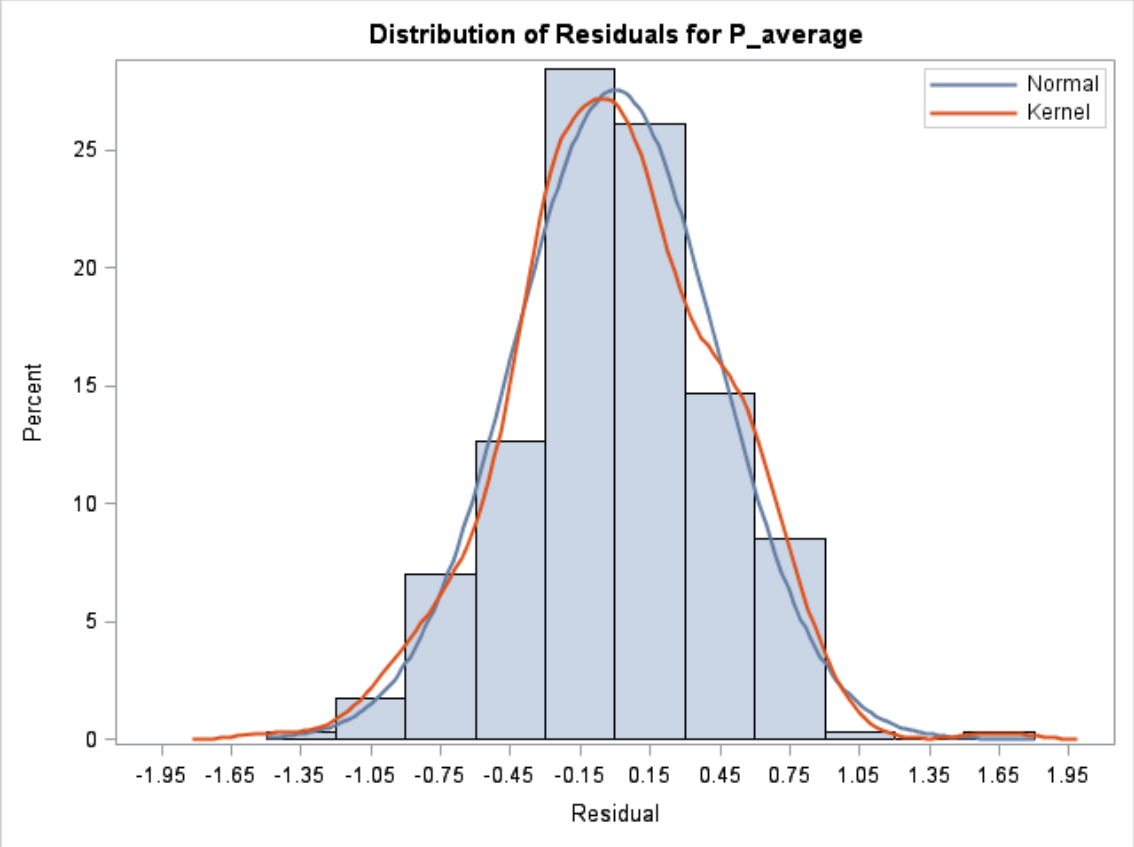
Normal Q-Q Plot of Regression Standardizes Residual



Source: Developed for the research

Appendix 4.3.3(2): Histogram with Normal Distribution of Curve of Academic Performance

Histogram



Source: Developed for the research