Royal University of Phnom Penh

Institute of Foreign Languages

Department of English

Master in TESOL

Roles of the Big Five personality traits in predicting undergraduates' academic performance

A Thesis Submitted

In Partial Fulfillment of the Requirements for the Degree of Master of Arts in Teaching English to Speakers of Other Languages (MA in TESOL)

Submitted by

Mr. Lim Leanghorng

Supervised by

Mr. Chan Sophal

August 2018

Royal University of Phnom Penh

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ប្រធានបទស្រាវជ្រាវ

តួនាទីរបស់លក្ខណៈបុគ្គលទាំង៥ក្នុងការទស្សន៍ទាយលទ្ធផលសិក្សារបស់និស្សិតថ្នាក់បរិញ្ញាបត្រ

A Research Paper Submitted

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The real sign that this journey is coming to an end is that I am now writing these lines to express my gratefulness to everyone who has supported me intellectually, practically, emotionally, and financially during this endeavor. The most important person I am grateful to is Mr. CHAN Sophal, my supervisor. I deeply appreciate him for his honest enthusiasm, tireless support, mentorship, and encouragement. I am so thankful that he always spent his lunch time for listening to my concerns and showing me a path to move forward. I would like to thank Dr. KHAN Bophan, the program coordinator, for his kind and unconditional support. Regardless of his schedule and multiple commitments, he would always be there to provide me with the guidance and assistance. Many thanks also to Dr. KEUK Chan Narith for his kindness and inspirational stories. All other lecturers, staff at Studies Office, and classmates, though not named, are not forgotten. I am so grateful to you all.

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Finally, I owe many thanks to all my participants who voluntarily completed the questionnaire. Their participation means a lot to me.

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STUDENT DECLARATION

I, LIM Leanghorng, declare that the master thesis titled "Roles of the Big Five personality traits in predicting undergraduates' academic performance" contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, the thesis is my own work. All primary and secondary sources are properly cited and acknowledged to the best of my knowledge.

Signature: _____

Mr. LIM Leanghorng

Date: _____

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LETTER OF APPROVAL

This is to certify that the research titled "Roles of the Big Five personality traits in predicting undergraduates' academic performance" carried out by **Mr. Lim Leanghorng** has been read and confirmed to meet the thesis requirements of the Department of English, Institute of Foreign Languages, Royal University of Phnom Penh. I, therefore, approve the thesis to be submitted as a partial fulfillment of requirements for Master of Arts (M.A.) degree in Teaching English to Speakers of Other Languages (TESOL).

_____ _____

Mr. Chan Sophal Date

Research Supervisor

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ABSTRACT

This quantitative study investigated the relationship between the personality traits and academic performance, and the predictive role of the personality traits on academic performance among a group of undergraduate students studying in a university in Phnom Penh, Cambodia (N=181). The NEO Five-Factor Inventory-3 (NEO-FFI-3) (McCrae & Costa Jr., 2010) was used to measure the students' Big Five personality traits, and Grade Point Average (GPA) was used as a criterion for academic performace. The results of data analyses revealed that constructs of Conscientiousness had a significant positive relationship with academic achievement. However, the results of regression analyses showed that combination of variables to predict academic achievement from the Big Five personality traits was not statistically significant, $F(5,152)=1.56,\ p=.175>0.05$. The results contradict most of the published studies which have confirmed that the Big Five personality traits were the most important predictors of students' academic performance. The contradicting results can be explained by the fact that the participants in the current study have different major from those in the previous studies, and the program in the current study has different assessment procedure to assess the students from that of the previous studies. The results of the present research affirm the correlation between the Big Five factors and academic performance, and possible practical utility of the using the Big Five factors to predict students' academic performance in tertiary level. According to the findings, it is recommended that the relationship between the Big Five personality traits and academic performance of the students from different majors and different institutes should be investigated in future research in Cambodia context.

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CHAPTER 1: INTRODUCTION

1.1. Research Background

Once upon a time, we did not have universal terms describing our personality (Goldberg, 1993). Thanks to the development of research methodology in personality traits and empirical findings, we have gained an understanding of our personality (e.g. Goldberg, 1993; Harris, 1940; Thurstone, 1934). More excitingly, personality traits have been verified as predictors of diverse criteria including but not limited to occupation, job performance (Goldberg, 1993), and academic performance (Harris, 1940; Poropat, 2009). Factors affecting college grades have taken so much interest from different researchers since 1930 (Harris, 1940).

More and more attention has been paid to factors such as personal details and background (e.g. sex, age, family background, etc.), physical data, personality, interests, attitudes, high school factors, study habits and methods, teaching methods and conditions, and incentives and direct motivation, other than intelligence (Harris, 1940). Personality traits have been found to correlate with grades (Harris, 1940; Poropat, 2009; e.g. Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, Schmeck, & Avdic, 2011). In this regard, the growing of acceptance of the Five-Factor Model of Personality known as the Big Five Factors (e.g. McCrae & Costa Jr., 2003), which consists of Extraversion (E), Openness (O), Conscientiousness (C), Agreeableness (A), and Neuroticism (N), provided an important framework for comparing the findings of different personality studies with similar research design (Poropat, 2009).

1.2. Statement of Problem

Studies have found that Conscientiousness (C) and Openness (O) are the key predictors of academic achievement, Grade Point Average (GPA) (e.g. Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, &

Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011; Poropat, 2009). It is, therefore, important to explore the strategies to construct "conscientiousness" and "openness" personality within the students because they are the two important traits which predict students' academic performance. In this regard, researchers have suggested instructors design course assignment and testing methods which foster the positive traits. Komarraju et al. (2011) suggested that course instructors should require students to submit drafts of assignments in small parts to foster students' conscientiousness, and should build students' imagination by linking concept and theory to real-life events in order to construct students' openness. However, these suggestions are not from the research findings. In other words, they are researchers' personal opinion.

It has been empirically proven that the five factors of personality are stable across different social and cultural backgrounds (McCrae & Costa Jr., 2003), and conscientiousness and openness are the key predictors of academic achievement (Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011; Poropat, 2009). However, it is premature to conclude that conscientiousness and openness are the key predictors of academic achievement among Cambodian undergraduates as there is no such research in the field of matter in Cambodian context.

The current study is, therefore, undertaken to examine the correlation between the Big Five personality traits and academic performance of undergraduate students in a university in Phnom Penh, Cambodia. The findings will contribute to the understanding of the factors affecting college students' academic achievement in Cambodia and highlight potential strategies which course instructors can use to improve students' performance by taking students' personality traits into account.

1.3. Research Objectives and Research Questions

The aims of the present study are to:

1. Identify the differences among student groups, freshmen, sophomores, and juniors, on each of the Big Five personality traits.
2. Identify the relationship between personality traits and academic achievement of Cambodian undergraduate students.
3. Identify the role of the Big Five personality traits in predicting academic achievement of Cambodian undergraduate students.

To achieve these aims, the study is designed to address the following questions:

1. Are there differences among student groups, freshmen, sophomores, and juniors, on each of the Big Five Personality Traits?
2. Is there any significant relationship between each of the Big Five personality traits and academic achievement of Cambodian undergraduate students?
3. Do the Big Five personality traits have predictive value for academic achievement of Cambodian undergraduate students?

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CHAPTER 2: LITERATURE REVIEW

2.1. History of personality traits

In the past decades, many researchers and scientists have focused their interest on personality traits. Francis Galton was one of the first scientists who acknowledged the foundation of “lexical hypothesis” in which individual differences will be encoded as single terms in some or all of the languages around the globe (Goldberg, 1993). Galton (1884, as cited in Goldberg, 1993) used the dictionary as a means to estimate the number of personality-descriptive terms in English language and to analyze how the terms share the meanings. The Galton’s estimated terms were empirically sharpened by Allport and Odbert (1936, as cited in Goldberg, 1993) and then by Norman (1967, as cited in Goldberg, 1993).

Concerning the relationships among the personality terms, later investigators were trying to discover the nature of the relationships in order to construct a structural representation of personality-descriptive terms. Thurstone was among these first investigators and the father of factorial methods of analysis (Goldberg, 1993) which is a tool to be used by different researchers to develop the theory of mental abilities and temperamental traits (Thurstone, 1934). Thurstone (1934) identified a list of sixty adjectives commonly used to describe people. The list of adjectives together with their synonym were given to 1300 raters to underline the adjectives which they will use to describe a person they know.

Thurstone’s factor analysis method was adopted by Raymond B. Cattell. Cattell (1943) used the Allport and Odbert's list of trait names to rate one hundred adult representatives of the general population whether the samples were above or below the average on each trait. Cattell eventually developed a list of 35 bipolar items, each of which includes descriptive adjectives and phrases. Though Catttel has repeatedly claimed to have identified dozens of the factors, when his variables were analyzed by other researchers, only five factors were proven to be replicable (Goldberg, 1993).

Though the studies of personality traits had begun since late 19th century, the beginnings of the Big Five have developed only in early 1960s through the publications of Tupes and Christal's in 1961 and of Norman's in 1963 (Wright, 2008).

2.2. Personality Traits – The Big Five

Though there was a strong consensus over the emergence of the Big-Five factors, there was a disagreement about the specific nature of Factor V because researchers interpreted it differently from "Culture" to "Intellect" and the most recently to "Openness to Experience" (Goldberg, 1993). However, most of the recent studies in personality traits has adopted the Big-Five Factors interpreted by Robert R. McCrae and Paul T. Costa Jr. (e.g., Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011).

These big five personality traits are identified as Extraversion (E), Openness (O), Conscientiousness (C), Agreeableness (A), and Neuroticism (N). Each of the five traits has an opposite and that facets describe that end as well (Goldberg, 1993; Jensen, 2015). Jensen (2015) organized the traits in the table as in table 2.1 to give an overview of the Big Five traits and the related facets.

Table 2.1

Personality Traits and Facets

Personality Traits	**Facets**	**Opposite Traits**	**Facets**
Extraversion (E)	Talkative, a joiner, physically active, affectionate, passionate, fun-loving	Introversion	Reserved, seeing solitude (a loner), physically passive, quiet, sober, unfeeling
Openness/ Open to new experiences (O)	Imagination, creativity, originality, prefer variety, curiosity, liberal	Traditionalist	Down to Earth, uncreative, conventional, uncurious, prefer routines, conservative
Conscientiousness (C)	Conscientious, hard-working, ambitious, well organized, persevering, punctual	Careless	Quitting, negligent, lazy, disorganized, aimless, late
Agreeableness (A)	Softhearted, trusting, generous, acquiescent, lenient, good-natured	Self-centered	Suspicious, ruthless, stingy, antagonistic, critical, irritable
Neuroticism (N)	Worrying, temperamental, self-pitying, self-conscious, emotional, vulnerable	Emotionally stable	Calm, even-tempered, self-satisfied, comfortable, unemotional, hardy

Every individual can be seen to be somewhere on the continuum of each trait creating a complex set of personality (Jensen, 2015). Every individual can have a dominant trait or several dominant traits. The dominant personality traits have a direct influence on the

individuals such as their preference and decision making (Jensen, 2015). A person, for example, whose trait is on the extreme end of introversion is reserved and quiet and hates being surrounded by people. He/she, therefore, would make a decision to participate in social events as little as possible. However, Matthews, Deary, and Whiteman (2009) claimed that though a person with extreme personality traits is likely to act in a certain way, in a certain situation he/she can act in an atypical, more situation dependent way. For example, the most extroverted individual can sometimes prefer to be alone and isolated from the others.

2.3. Personality trait measurement instruments

Though there is an agreement on the emergent of the Big Five for personality (Goldberg, 1993; Matthews, Deary, & Whiteman, 2009), there is no single set of the measurement instrument agreed upon by all researchers (De Raad & Perugini, 2002, as cited in Matthews, Deary, & Whiteman, 2009). However, five-factor model of Costa Jr. and McCrae will be discussed and adopted for this study thanks to a huge number of empirical studies done by Costa Jr. and McCrae and other researchers in an effort to verify and update the measurement scales (Matthews, Deary, & Whiteman, 2009). Moreover, their measurement scale, the NEO Five-Factor Inventory (NEO-FFI), is one of the most widely used scales for personality trait measurement (Matthews, Deary, & Whiteman, 2009; Pytlik Zillig, Hemenover, & Dienstbier, 2002; e.g, Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011).

2.4. Personality trait and academic achievement

Back to the day which we had no way to describe personality, it did not make sense to correlate personality traits to an individual's performance in a certain job (Goldberg, 1993). However, now we have gained our personality, researchers have used personality measures as predictors of diverse criteria as such as selection criteria and job performance (Goldberg, 1993). In education aspect, researchers have used personality traits as predictors of

motivation, learning styles, and academic achievement, and so on (e.g., Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011).

Komarraju et al. (2009) conducted a quantitative study of 308 undergraduate students which aimed to examine the relationship between the Big Five traits, academic motivation, and academic achievement. Participants who were college students were asked to complete the Five-Factor Inventory and the Academic Motivation scale and to report their grade point average (GPA). The result of data analysis reveals that personality traits play a role in explaining academic motivation and achievement. Furthermore, conscientiousness is a significant mediator of the relationship between intrinsic motivation to accomplish and GPA. Openness is also positively related to intrinsic motivation. A similar study by Hazrati-Viari et al. (2012) revealed that conscientiousness predicted both of intrinsic and extrinsic motivation but openness to experience predicted only intrinsic motivation. Moreover, the two traits predicted academic performance.

Komarraju et al. (2011) examined the relationship between personality, learning styles, and academic achievement and the extent to which the relationship between personality and academic achievement might be mediated by specific learning styles. Three hundred and eight undergraduates completed the Five-Factor Inventory (NEO-FFI) and the Inventory of Learning Process (ILP) and reported their current GPA. The results revealed a number of interesting relationship between the Big Five personality traits, learning styles, and academic achievement, and also show that relationship between openness and GPA are partially mediated by reflective learning styles. Furthermore, openness, agreeableness, and conscientiousness and all four learning styles were positively correlated with GPA.

A research study conducted by Hakimi, Hejazi, and Lavasani (2011) to examine the relationship between personality traits and academic achievement (GPA) revealed similar results. Two hundred and eighty-five students completed the NEO Five-Factor Inventory

(NEO-FFI) personality scale and self-reported their GPA. The result of data analysis showed that personality traits accounted for 48 percent of the variance in academic achievement, and conscientiousness explained 39 percent of the variance alone. Conscientiousness is, therefore, the most important predictor. Furthermore, there are no gender differences in personality traits.

In conclusion, "conscientiousness" and "open to new experience" are the two main predictors of students' academic achievement and success (e.g. Hakimi, Hejazi, & Lavasani, 2011; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011).

2.5. The current research

Much research has been conducted to find the relationship between personality traits and academic achievement. Most of the studies have revealed similar findings that conscientiousness and open to new experience are the key predictors of students' academic achievement (e.g., Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011). However, the fact that academic achievement is measured by self-reported GPA is not reliable enough because there is no guarantee that the participants can exactly remember their GPA. To fill the recent research gap, the current study examines the correlation between personality traits and students' academic performance using the GPA from the school database.

Chapter 3: Methodology

3.1. The Context of the study

Higher education institutes in Cambodia are categorized into two streams: public and private. The two streams are under the supervision of two government ministries. The academic stream is under the supervision of the Ministry of Education, Youth and Sport (MoEYS) while the vocational stream is supervised by the Ministry of Labour and Vocational Training (Chet, 2009).

Royal University of Phnom Penh (RUPP), established in 1960, is one of the biggest and oldest public universities in Cambodia under the supervision of MoEYS (RUPP, 2016). Institute of Foreign Languages (IFL) of RUPP is a well-known institute offering degrees in foreign languages such as Chinese, English, French, International Studies, Japanese, and Korean, and Thai (RUPP, 2016). Department of English (DoE) is the one among the seven other departments of the institute. To be enrolled in DoE, all high school graduate students except scholarship students are required to sit for an entrance exam which aims to test students' English skills such as vocabulary, sentence structure, and reading skills.

3.2. Research Design

The design of this study reflected what Creswell (2012) calls correlational research design. An explanatory research design (Creswell, 2012) was used to correlate two variables, personality traits and academic performance. Furthermore, a prediction research design (Creswell, 2012) was used to identify the predictive value of the Big Five Personality Traits in predicting the academic performance of undergraduate students.

3.3. Study Population

All freshmen, sophomores, and juniors (N=1400) at the Department of English (DoE) of Institute of Foreign Languages (IFL), Royal University of Phnom Penh (RUPP) in the academic year 2016-2017 which consisted of 51 classes were the population of the study. The

seniors were not included because by the time of the study, May – July 2018, they had already graduated and it was not feasible to reach them one by one for data collection. All the students were taking bachelor's degree in English, and English was used as a medium of instruction.

The students in each year were studying in three different shifts, morning, afternoon, and evening, as shown in the table below.

Table 3.1

The description of the study population (Studies Office, IFL, RUPP)

Year of Study	Shift	Number of Classes
Year 1 (Freshmen)	Morning	5
	Afternoon	7
	Evening	7
Year 2 (Sophomores)	Morning	5
	Afternoon	6
	Evening	6
Year 3 (Juniors)	Morning	4
	Afternoon	5
	Evening	6
Total		51

3.4. Sample Selection

Initially, the participants were to be selected using simple random sampling because it is the ideal method to select samples for a study which enables the researcher to better generalize the research's findings to the whole research population (Creswell, 2012; Fraenkel, Wallen, & Hyun, 2012; Muijs, 2004).

However, owing to the fact that it was not feasible to access to a random individual student's score because the students are clustered into classes, the sampling technique was changed to stratified cluster sampling. The participants were selected using stratified cluster sampling technique where the populations were clustered into classes and grouped based on the shift and the year they were studying in the academic year 2016-2017, and the participants were then randomly selected from each group separately to ensure the result can be generalized in all three different shifts and years (Creswell, 2012; Fraenkel, Wallen, & Hyun, 2012; Muijs, 2004). Fishbowl draw method was used in the process of sample section. For example, to select the sample for year one students studying in the morning, each of year one classes in the morning shift was written in a piece of paper, folded, and put in a box. The researcher picked up a piece of paper from the box. The students in the class written in the selected paper were the sample of the study. This procedure was repeated to select classes from other shifts studying in year 1, year 2, and year 3.

According to Creswell (2012), an educational research needs around 30 participants for a correlational study to establish the relationship between variables. However, Fraenkel et. al. (2012) suggest a minimum number of 50 participants for correlational studies that relate variables. Both Creswell (2012) and Fraenkel et. al. (2012) agree that it is important to have a sample size as large as possible in order to minimize sampling error. Considering resources, time, and energy available, nine classes were randomly selected for the study. One class represents the population of one shift in one particular year. The table below shows the number of the students in all nine classes selected.

Table 3.2

The description of the research samples (Studies Office, IFL, RUPP)

Year of Study	Shift	Class	Sample Size		
			Males	Females	Total
Year 1 (Freshmen)	Morning	M1.3	13	14	27
	Afternoon	A1.6	9	18	27
	Evening	E1.2	10	14	24
Year 2 (Sophomores)	Morning	M2.1	6	20	26
	Afternoon	A2.4	11	17	28
	Evening	E2.3	17	8	25
Year 3 (Juniors)	Morning	M3.1	8	17	25
	Afternoon	A3.2	15	9	24
	Evening	E3.3	11	16	27
Total			100	133	233

3.5. Participants

The participants of the study were 180 students who were studying in year 1, year 2 and year 3 at the Department of English of IFL, RUPP, in the academic year 2016-2017. In total, 233 students were selected for the study. However, the number of the students completing the survey was 181 (77.68%). The researcher had tried to reach all of the selected participants; however, not all of them could be reached because some of them had either dropped out of the program or been on a long leave. Out of the 181 students, one was not included in the study because of having selected all *neutral* in the questionnaire.

Of those participants (n=180), 58.33% (n=105) were females, and 41.67% (n=75) were males. Freshmen made up 35.56% (n=64), sophomore 35% (n=63), and junior 29.44% (n=53).

3.6. Instrumentation

Personality traits: The NEO Five-Factor Inventory-3 (NEO-FFI-3)* (McCrae & Costa Jr., 2010) was used to measure the five domains of personality traits (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) because of the fact that it has been translated in different languages and shown validity and reliability across countries (Aluja, Garcıa, Rossier, & Garcıa, 2005; McCrae & Costa Jr., 2004; McCrae & Costa Jr., 2003), and it has been widely used to measure the Big Five traits (Matthews, Deary, & Whiteman, 2009; Pytlik Zillig, Hemenover, & Dienstbier, 2002; e.g. Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011). The NEO-FFI-3 is a 60-item (12 items for each trait) version of 240-item NEO Personality Inventory (NEO-PI) using a 5 Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree).

Table 3.3 explains how the 60 items of the questionnaire were classified. Positive items were coded as normal where 0, 1, 2, 3, and 4 are for Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree respectively. However, reversed coding was used for negative items where 4, 3, 2, 1, and 0 are for Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree respectively.

* NEO-FFI-3 is strictly copyrighted. The researcher purchased the questionnaire from Psychological Assessment Resources at www.parinc.com. The questionnaire attached in the appendix C is for the examiners to review only. It must not be reproduced in any form for any purpose.

Table 3.3

Items Classification of the Questionnaire

Personality Traits	Item Number	
	Positive Items	Negative Items
Neuroticism (N)	6, 11, 21, 26, 36, 41, 51, 56	1, 16, 31, 46
Extraversion (E)	2, 7, 17, 22, 32, 37, 47, 52	12, 27, 42, 57
Openness (O)	3, 8, 13, 38, 43, 53, 58	18, 23, 28, 33, 48,
Agreeableness (A)	4, 29, 34, 49	9, 14, 19, 24, 39, 44, 54, 59
Conscientiousness (C)	5, 10, 20, 25, 35, 40, 50, 60	15, 30, 45, 55

In order to minimize the linguistic difficulties which could possibly affect the reliability and validity of the questionnaire, the researcher went through each of the 60 items in order to identify and replace the difficult words, phrases, and structures with the easier version while preserving the meaning of the items. Furthermore, before the questionnaire was used, the researcher had piloted the questionnaire with a group of ten sophomores who were not the selected participants yet shared similar English proficiency with the participants. The students were asked to complete the questionnaire and to identify the difficult words, phrases and/or structures used in the questionnaire. Feedback regarding linguistic difficulty and the flow of the questionnaire was obtained. All of the pilot participants gave positive feedback of the content and the flow of the questionnaire, and some of them suggested a few changes of difficult words such as “courteous” and “manipulate”, which were changed to “polite” and “make use of” respectively.

Table 3.4 shows the list of items in the questionnaire in which the difficult sentence structures and vocabulary has been replaced by easier versions.

Table 3.4

The List of Items Replaced

Item #	Original Items	Adjusted Items
4	I try to be courteous to everyone I meet.	I try to be polite to everyone I meet.
11	When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.	When I'm under a great deal of stress, sometimes I feel like I'm losing control.
14	Some people think I am selfish and egotistical.	Some people think I am selfish and self-centered.
16	I rarely feel lonely or blue.	I rarely feel lonely or sad.
20	I try to perform all the task assigned to me conscientiously.	I try to perform all the task assigned to me carefully.
21	I often feel tense and jittery.	I often feel tense and nervous.
22	I like to be where the action is.	I like to be at a very active and exciting place.
32	I often feel as if I'm bursting with energy.	I often feel as if I'm having a lot energy.
37	I am a cheerful, high-spirited person.	I am a cheerful, active person.
39	Some people think of me as cold and calculating.	Some people think of me as unfriendly and tricky.
40	When I make a commitment, I can always be counted on to follow through.	When I make a commitment, I can always be counted on to do it.
47	My life is fast-paced.	My life is busy.
59	If necessary, I am willing to manipulate people to get what I want.	If necessary, I am willing to manipulate (**make use of**) people to get what I want.

Academic Achievement: Grade Point Average (GPA) was used as a measure of academic achievement. The fact that GPA of the students in the current study was the combination of both on-going assessment and final exam performance made GPA as a raliable measurement of students' academic achievement. Forthermore, GPA is normally used to assess students' academic achievement in tertiary level (e.g. Hakimi, Hejazi, & Lavasani, 2011; Hazrati-Viari, Rad, & Torabi, 2012; Jensen, 2015; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011).

The researcher could only access the raw score. The researcher, therefore, calculated the GPA for each subject and Cumulative Grade Point Average (CGPA) by himself using the guideline and standard obtained from the Office of Admission and Records of RUPP.

Each individual student GPA and CGPA was calculated by using the following procedure and formula.

- The class grades which are based on a 100 scale were computed on a 4.00 scale GPA as the noted: 85% - 100% = 4.00, 80% - 84% = 3.50, 70% - 79% = 3.00, 65% - 69% = 2.50, 50% - 64% = 2.00, 45% - 49% = 1.50.
- If $N_A, N_B, N_c, \ldots$ represent the number of credit of subject A, B, C, … and $GPA_A, GPA_B, GPA_C, \ldots$ represent the GPA of subject A, B, C, …, to calculate the students' CGPA, the following formula is used:

$$CGPA = \frac{(N_A * GPA_A) + (N_B * GPA_B) + (N_C * GPA_C) + \cdots}{N_A + N_B + N_C + \cdots}$$

Table 3.5 shows an example of how a students' GPA was computed for the study.

Table 3.5

An example of a student's CGPA calculation

Subject	Credit	Score	GPA
CE201: Core English	6	78	3.00
WS201: Writing Skills	3	84	3.50
LS201: Literature Studies	3	75	3.00
GS201: Global Studies	3	73	3.00
		CGPA	**3.10**

3.7. Data Collection Procedure

Right after the samples of study had been selected, the researcher sent a letter (Appendix A) to the head of the Department of English of IFL, RUPP via the MA in TESOL program coordinator requesting a permission to conduct the study in the department and to access the score of the students in the nine classes selected.

After gaining the approval from the head of the Department, the data was collected. It took four weeks to collect the data. The data collection process was time-consuming because the selected students were not in the same class nor the same shift from the 2016 – 2017 academic year during the time of data collection which was from May – June 2018. Furthermore, the data collection period fell on the teaching practicum period of students in the evening shift. The data collection for those who were on practicum was, therefore, delayed until they came back to their normal class.

Where possible, the participants were asked to complete the questionnaire on spot in order to get a high response rate. However, most of the time, the participants were allowed to take the questionnaire home because they could not take their class time to complete the questionnaire due to the fact that not everyone in the class was selected for the study.

3.8. Data Analysis

Data were analyzed by Statistical Package for the Social Sciences version 21.0 (SPSS 21.0). Before the data were coded and entered into the software, the data was double checked and cleaned by the researcher to see if there were any unanswered items. By following the professional manual of the inventories (McCrae & Costa Jr., 2010), if 10 or more items were left blank, the questionnaire was considered as invalid and taken out, and if nine or fewer items was left blank, the blank items were scored as *neutral*.

There were no cases where more than 10 items were left blank. However, there were cases where less than 10 items were left blank. All the collected responses were, therefore, considered as valid, and entered into SPSS software.

Before analyzing the data, descriptive statistics were computed for all study variables to check for any errors. After the data was confirmed to be accurate, One-Way ANOVA was used to analyze the differences among the year of the studies on personality traits. Furthermore, correlation was computed for the correlation between independent variables (personality traits) and the dependent variable (students' GPA). Finally, regression was computed for the predictive value of personality traits on students' GPA.

3.9. Ethical Considerations

Ethic of the research was taken seriously in this study. Primarily, the permission to conduct a study at the site, the Department of English of IFL, RUPP, was formally requested for and granted. Furthermore, the data management plan (Appendix B) was in place in order to ensure a systematic procedure of data collection and management to protect the identity and privacy of the participants.

All of the participants were well informed of the types data to be collected from them and how the data was to be used. More importantly, they were informed that their

participation was entirely voluntary, and assured that their responses are confidential and that any kind of information disseminated in public through research report and presentation will not include any information which will make it possible to identify their identity.

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CHAPTER 4: RESULTS

4.1. Introduction

The results of the current study are presented in this chapter. In order to do empirical data analysis, certain procedures of data processing are required. Exploratory Data Analysis (EDA) is important to do to understand the data and more importantly to check assumptions of the statistics to be used in the study (Morgan, Leech, Gloeckner, & Barrett, 2011). In correspondence with the procedure suggested by Morgan, Leech, Gloeckner, and Barrett (2011), the results are presented in the following order: first descriptive statistics were computed to check the normality and outliers of the data, then scale reliability to check the internal reliability of the instrument, and finally correlation and multiple regression analysis were conducted to identify significant predictors.

4.2. Descriptive Statistics

Pearson correlation and bivariate and multiple regression can be used only when the variables are normal or scale (Morgan, Leech, Gloeckner, & Barrett, 2011). Therefore, before actually running correlation and regression, it is important to check the normality of variables. There are different ways to check whether a variable is normally distributed. Skewness, one of the ways of checking normality of the variable, is used check the normality of the variables in the present study.

Table 4.1 presents the skewness of the study variables such as year of study, GPA, and personality traits. The skewness of the ordinal variables namely, neuroticism, extraversion, openness, agreeableness, and conscientiousness, is between -1 and 1. According to Morgan, et. al. (2011), the variables are normally distributed. The researcher, therefore, changed to **scale** in the **measure** column of the variables in SPSS for further analysis.

Table 4. 1

Skewness of the study variables

Construct Variable	Range	Min	Max	Mean	SD	Variance	Skewness	
								SE
Year of study	2	1	3	1.94	.81	.65	.11	.18
GPA	3.13	.80	3.93	2.75	.51	.26	-.60	.18
Personality Traits								
Neuroticism	40	6	46	28.06	7.35	53.97	-.28	.18
Extraversion	36	8	44	26.97	6.04	36.48	-.46	.18
Openness	23	20	43	29.27	4.52	20.41	.58	.18
Agreeableness	26	15	41	28.84	4.97	24.71	-.36	.18
Conscientiousness	36	11	47	28.32	6.41	41.07	-.10	.18

Note: *N=180.* Students' GPA is measured on the four-point scale. Personality traits are measured on the forty-eight scale.

4.3. Internal Reliability

The NEO Five-Factor Inventory-3 (NEO-FFI-3) (McCrae & Costa Jr., 2010) was used to examine students' personality traits. The reliability coefficient of the NEO-FFI-3 for adult samples had calculated at .86, .79, .78, .79, and .82 for neuroticism, extraversion, openness, agreeableness, and conscientiousness respectively (McCrae & Costa Jr., 2010). The Cronbach's alpha values for the NEO-FFI for this study ranged from .513 to .818 as shown in table 4.2.

Table 4. 2

Cronbach's Alpha Coefficients

NEO Five-Factor Inventory	N of Items	Cronbach's Alpha (Present Study)	Cronbach's Alpha (McCrae & Costa Jr., 2010)
Neuroticism	12	.811	.86
Extraversion	12	.721	.79
Openness	12	.571	.78
Agreeableness	12	.513	.79
Conscientiousness	12	.818	.82

To provide good support for internal reliability, Cronbach's alpha should be greater than .70 (Morgan, et. al., 2011). The Cronbach's alpha of neuroticism ($\alpha = .811$), extraversion ($\alpha = .721$), and conscientiousness ($\alpha = .818$) are satisfactory because they are greater than .70. However, the Cronbach's alpha of openness ($\alpha = .571$) and agreeableness ($\alpha = .513$) are not satisfactory because they are less than .70. Though the Cronbach's alpha value of the two subscales had never been this low, it is common that the Cronbach's alpha value of openness and agreeableness has always been lower than that of other subscales (e.g. Hakimi, et. al., 2011; Komarraju, et. al., 2011). The low internal consistency of openness and agreeableness scales can be explained by the fact that the two scales include varied item content which all represent the same trait. Therefore, "it should show high validity despite low internal consistency" (McCrae & Costa Jr., 2010, p.71).

4.4. One-Way ANOVA

The means and standard deviation of personality traits (measured by the NEO-FFI-3) and the dependent variable (annual grade point average) for freshmen, sophomores, and juniors are presented in table 4.3. Students' GPA was measured on the four-point scale, and personality traits were measured on the forty-eight-point scale. In other words, four (4.00) is the maximum GPA of the students, and forty-eight (48.00) is the maximum score for each of the Big Five personality traits.

No statistically significant difference was found among the three groups of student, freshmen, sophomores, and juniors, on neuroticism, F (2, 175) = .76, p = .468, on extraversion, F (2, 173) = 1.09, p = .338, on openness, F (2, 175) = 2.23, p = .111, on agreeableness, F (2, 173) = .26, p = .775, and on conscientiousness, F (2, 169) = .73, p = .482.

Table 4. 3

Comparisons of means and standard deviation for freshmen, sophomores, and juniors

Variable	Freshmen (n=64)		Sophomores (n=63)		Juniors (n=53)	
	M	SD	M	SD	M	SD
Personality Traits						
Neuroticism (N)	27.52	5.80	28.35	9.13	28.38	6.71
Extraversion (E)	26.55	4.88	27.06	7.27	27.36	5.78
Openness (O)	29.45	4.67	29.81	4.70	28.42	4.04
Agreeableness (A)	29.22	4.96	28.49	5.21	28.81	4.75
Conscientiousness (C)	28.69	5.53	27.84	7.71	28.43	5.75
Grade Point Average (GPA)	3.0963	.376	2.61	.42	2.52	.54

Table 4. 4

One-Way Analysis of Variance Summary Table Comparing Student Groups on each of the Big Five Personality Traits

Source	*df*	SS	MS	F	*p*
Neuroticism					
Between Groups	2	75.44	37.72	.76	.468
Within Groups	175	8644.18	49.40		
Total	177	8719.62			
Extraversion					
Between Groups	2	65.45	32.72	1.09	.338
Within Groups	173	5192.09	30.01		
Total	175	5257.54			
Openness					
Between Groups	2	81.32	40.66	2.23	.111
Within Groups	175	3191.20	18.23		
Total	177	3272.52			
Agreeableness					
Between Groups	2	10.97	5.49	.26	.775
Within Groups	173	3710.48	21.45		
Total	175	3721.45			
Conscientiousness					
Between Groups	2	43.63	21.82	.73	.482
Within Groups	169	5023.41	29.72		
Total	171	5067.04			

4.5. Outliers

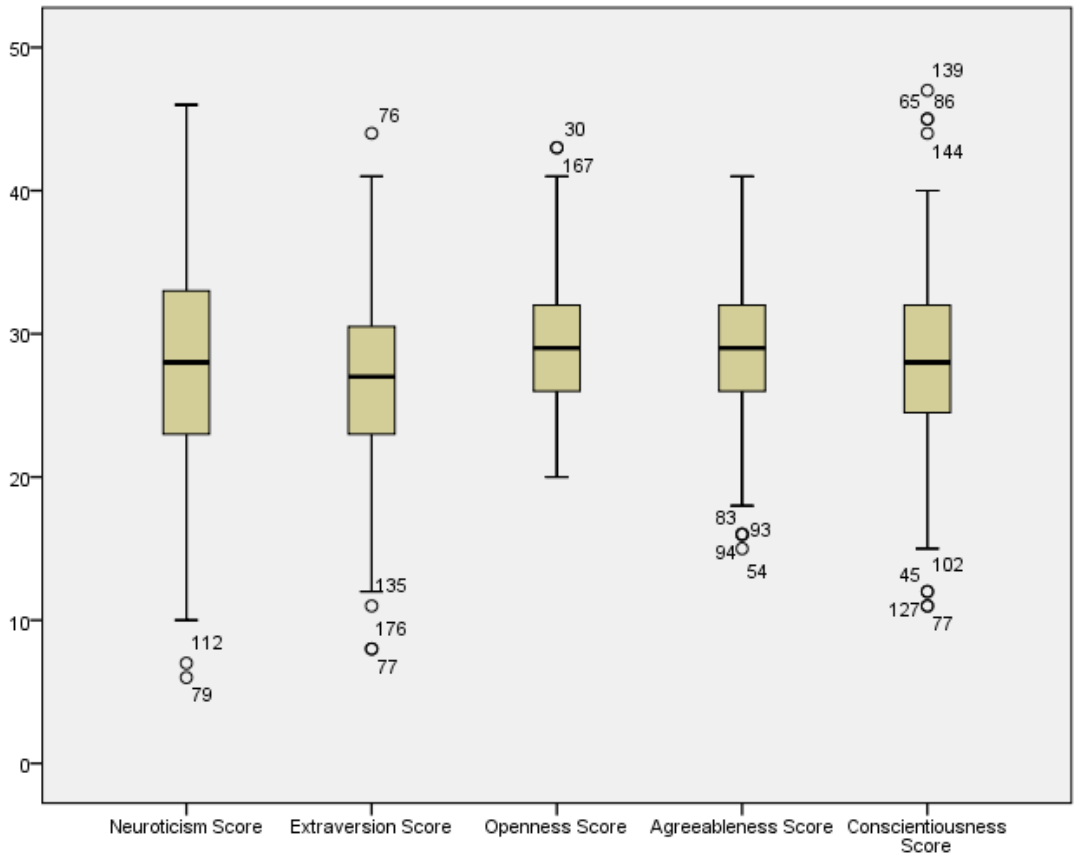
The extreme scores known as outliers can have great effects on correlation (Morgan, Leech, Gloeckner, & Barrett, 2011). Boxplots were used to identify outliers. Figure 4.1 and Figure 4.2 show the boxplots of GPA and personality traits respectively.

Figure 4. 1

Boxplot of Student's GPA

Figure 4. 2

Boxplots of Personality Traits



To eliminate the possible effect of outliers on correlation analyses, all of the identified outliers are changed to missing values.

4.6. Correlations

Pearson correlation was used to compute the correlation between personality traits and academic achievement because all of the variables are approximately normal. Table 4.5 presents the intercorrelations of all personality traits and academic achievement, and years of studies. As can be seen from the table, the correlations between the variables are relatively small.

The constructs of Conscientiousness are significantly related to academic achievement. A positive correlation is observed.

A significant negative correlation is shown between years of studies and academic achievement of the participants. However, there is no correlation shown between years of studies and the constructs of personality traits.

A significant negative correlation can be seen between of the constructs of Neuroticism and the constructs of Extraversion, Agreeableness, and Conscientiousness, while a significant positive correlation can be seen between the constructs of Extraversion and the constructs of Openness, Agreeableness, and Conscientiousness and between the constructs of Openness and Conscientiousness. However, there is no significant correlation between the constructs of Openness and the constructs of Neuroticism and Agreeableness, and between the constructs of Conscientiousness and Agreeableness.

Table 4. 5

Intercorrelations of Personality Traits, Academic Achievement, and Years of Studies

Variable	GPA	YS	N	E	O	A	C
Grade Point Average (GPA)	--	-.465**	-.091	-.107	.103	-.031	.160*
Years of Studies (YS)	--	--	.054	.110	-.096	-.054	-.090
Neuroticism (N)	--	--	--	-.194*	-.112	-.225**	-.280**
Extraversion (E)	--	--	--	--	.215**	.156*	.364**
Openness (O)	--	--	--	--	--	-.005	.341**
Agreeableness (A)	--	--	--	--	--	--	.127
Conscientiousness (C)	--	--	--	--	--	--	--

*p<.05 **p<.001

4.7. Regression

Simultaneous multiple regression was performed on the dataset in order to investigate the predictability of academic achievement by the Big Five personality traits. The results of multiple regressions are summarized in table 4.6. The combination of variables to predict academic achievement from the Big Five personality traits was not statistically significant, $F(5,152)=1.56$, $p=.175>0.05$. The adjusted R^2 value was 0.02. This indicates that 2% of the variance in academic achievement was explained by the Big Five personality traits. According to Cohen (1988), this is a small effect.

Among the Big Five personality traits, only conscientiousness significantly contributed to the prediction, $t=1.97$, $p=0.05$.

Table 4. 6

The Summary of Multiple Regression Results for the Big Five Personality Traits Predicting Academic Achievement (N=158)

Variable	B	$SE\ B$	β	t	p
Neuroticism	-.00	.01	-.04	-.52	.607
Extraversion	-.01	.01	-.14	-1.64	.102
Openness	.01	.01	.07	.84	.402
Agreeableness	-.00	.01	-.04	-.48	.633
Conscientiousness	.02	.01	.18	1.97	.050
Constant	2.67	.46			

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Chapter 5: Discussion, Implications, and Conclusion

5.1. Introduction

This chapter discusses the theoretical and practical implication of the results of the present study. Firstly, the results of the data analysis presented in chapter 4 will be discussed in relation to, compared with the relevant literature, and combined with the explanation of the findings. Secondly, the theoretical and practical implication of the results will be discussed and augmented with the practical recommendations. Next, the limitations of the study and the suggestions for further research will be reviewed and discussed. The chapter will be concluded with a concise summary of the research and conclusions.

The main purposes of the study are to identify the relationship between personality traits and years of studies, and academic achievement of Cambodian undergraduate students, and to examine the extent to which the personality traits predict academic achievement of the students. In order to achieve these purposes, the correlation between the Big Five personality scores, years of studies, and academic achievement, and the incremental predictive validity of the Big Five personality traits in academic achievement were explored.

5.2. Discussion of the Results

5.2.1. The differences among student groups on each of the Big Five personality traits

Studies have suggested that one's personality can be changed during the course of life especially when one is between 20-30 years of age (McCrae & Costa Jr., 2003; Roberts & DelVecchio, 2000; Siegler, et al., 1990). The consistency and stability of one's personality traits are associated with the current historical context (Roberts & DelVecchio, 2000). For example, in the present context, life is more challenging than decades ago. Therefore, one's personality traits can be changed more rapidly in order to adapt to the environment. It is,

therefore, of interest to determine if there are differences among student groups, freshmen, sophomores, and juniors, on each of the Big Five personality traits.

The present results revealed that there is no statistically significant difference among the three groups of student, freshmen, sophomores, and juniors on each of the Big Five personality traits, neuroticism, extraversion, openness, agreeableness, and conscientiousness. This can be implied that the current university education does not contribute to the growth of students' character and personality. Furthermore, this can be explained by the facts that the learning and teaching environment of students among the three different years (year 1, year 2, and year 3) are almost identical, even the nature of the courses being taught. Additionally, there is no difference in terms of assessment procedures and criteria among the year level.

5.2.2. The relationship between the Big Five factors and academic performance

A large body of research has examined the relationship between personality traits and academic performance at the university level (Chamorro-Premuzic & Furnham, 2003a; Chamorro-Premuzic & Furnham 2003b; De Feyter, Caers, Vigna, & Berings, 2012; Furnham & Chamorro-Premuzic, 2004; Hakimi, Hejazi, & Lavasani, 2011; O'Connor & Paunonen, 2007). Several studies have investigated the incremental predictive validity of the Big Five personality factors in academic outcomes (Brown, 1994; Chamorro-Premuzic & Furnham, 2003a; Conard, 2006; Dollinger & Orf, 1991; Lievens, Coetsier, De Fruyt, & De Maeseneer, 2002; Noftle & Robins, 2007; O'Connor & Paunonen, 2007; Wagerman & Funder, 2007; Wolfe & Johnson, 1995). A few studies have revealed that the predictive value of personality traits is above cognitive ability (Brown, 1994; O'Connor & Paunonen, 2007). However, to the best of the researcher's knowledge, no studies examining the relationship of personality traits (the Big Five) and academic performance, and the predictability of personality traits to academic outcomes in the context of undergraduate students in Cambodia.

The results of the present study confirm that in Cambodian context, the Big Five personality traits are also associated with the academic performance (GPA) of undergraduate students. Particularly, conscientiousness has the most significant and consistent positive relationship with academic GPA of the students. Although not statistically significant, openness is positively, while extraversion is negatively related to academic achievement. The result is consistent with the study of O'Connor and Paunonen (2007) who did a meta-analysis of recent empirical studies. The results of this study are also consistent with studies of Chamorro-Premuzic and Furnham (2003a), and Furnham and Chamorro-Premuzic (2004) which revealed that conscientiousness positively and extraversion negatively correlated with examination grades.

The results of multiple regression analyses of the current study show that personality traits have no significant predictive value to students' academic performance, $F(5,152)=1.56$, $p=.175>0.05$. Among the Big Five personality traits, conscientiousness is the most powerful factor contributing to the prediction, $t=1.97$, $p=0.05$. The results contradict most of the published studies which have confirmed the Big Five personality traits were the most important predictors of students' academic performance (Brown, 1994; Chamorro-Premuzic & Furnham, 2003a; Conard, 2006; Komarraju, Karau, & Schmeck, 2009; Komarraju M. , Karau, Schmeck, & Avdic, 2011; Lievens, Coetsier, De Fruyt, & De Maeseneer, 2002; Noftle & Robins, 2007; O'Connor & Paunonen, 2007; Poropat, 2009; Wagerman & Funder, 2007; Wolfe & Johnson, 1995).

The contradicting results can be explained by the fact that the participants in the current study have different major from those in the previous studies, and the program in the current study has different assessment procedure to assess the students from that of the previous studies. The results of the current study agree with the study conducted by Furnham and Monsen (2009) who used the grades of General Certificate of Secondary Education (GCSE) as the academic performance of high school students, and found that the personality

traits did not play any part in the test score of foreign languages such as French and German. The participants of the current study major in English which is a foreign language, while none of the above-mentioned previous studies has participants who majored in foreign language. In addition, the result of the current study also mirrored the study of Dollinger and Orf (1991) who examined the incremental predictive validity of the Big Five factors in different criteria such as course grade, objectie test performane, independent credit points, and final exam essay scores. Dollinger and Orf's study revealed that the NEO-PI personality factors can only predict non-self-report criteria, and cannot predict self-report criteria such as final exam essay scores which involved higher level integration and synthesis. By and large, the students in the current study sit for the exam which contains mostly essay questions which is an indicator of higher integration and synthesis especially in the subject of Writing Skills and Literature Studies. Moreover, the students' course grades are the results of students' oral presentation and essay writing. Therefore, the contradiction between the results of the current study and most of the past studies might be caused by the nature of the assessment procedures, more specifically the structure of the final exam paper.

The study conducted by Raad (1996) to identify the educational traits factors out of the comprehensive set of 1203 trait-descriptive adjectives constructed by Brokken (1979, as cited in Raad, 1996) revealed that of the Big Five personality traits, only conscientiousness and extraversion can be identified to capture the most of the education relevant meanings. It is, therefore, of interest to discuss the two traits in more detail.

5.2.2.1. Conscientiousness

A meta-analysis revealed that conscientiousness is a trait which is the most significantly and consistently related with academic performance of undergraduate students (Jensen, 2015; O'Connor & Paunonen, 2007). The results of the current study affirm that also in Cambodia context, conscientiousness is a dominant trait which has the highest correlation with the academic performance measured by Grade Point Average (GPA). The result is

consistent with various empirical studies (Chamorro-Premuzic & Furnham, 2003a; Furnham & Chamorro-Premuzic, 2004; Furnham & Monsen, 2009; Komarraju, Karau, & Schmeck, 2009; Komarraju M., Karau, Schmeck, & Avdic, 2011; Noftle & Robins, 2007; Wagerman & Funder, 2007) which have revealed that among the Big Five personality traits, conscientiousness had the strongest association with academic performance which was usually measured by course grade, final exam score, and GPA.

The results of the regression analysis of the present study explain a positive linear relationship between conscientiousness and students' GPA. In other words, the students' GPA increases when the conscientiousness score of the students increases. Though personality traits have no significant predictive value in academic performance, in the present study, it can still be noticed that among the five personality variables, conscientiousness plays the biggest and the most significant role which is consistent with several studies (e.g. Chamorro-Premuzic & Furnham, 2003b; Conard, 2006; Furnham & Chamorro-Premuzic, 2004; Lievens, et al., 2002; Noftle & Robins, 2007; Wagerman & Funder, 2007).

The positive relationship between conscientiousness and academic performance can be firstly explained in terms of academic motivation because motivation is one of the essential factors in students' achievement (Harris, 1940). More conscientious students are more motivated than the less conscientious one (Hazrati-Viari, Rad, & Torabi, 2012; Komarraju, Karau, & Schmeck, 2009). Moreover, the relationship can be explained by the characteristic of the conscientious students. They are a group of people who are good at self-descipline and self-regulation. Conscientious students are more hard-working and are more likely to start and finish the tasks in a timely and orderly manner. Last but not least, conscientiousness was proven to be significantly related to academic self-efficacy (Di Giunta, et al., 2013; McIlroy, et al., 2015), and academic self-efficacy is essentially associated with examination stress management (Halamandaris & Power, 1999) and academic performance (Zimmerman & Kitsantas, 2005).

5.2.2.2. Extraversion

Though the correlation between academic performance and the Big Five extraversion is not significant, the trait has the strongest negative effect to the academic performance, and the regression equations also show a negative linear relationship between extraversion and academic performance. This result mirrored the meta-analysis of O'Connor and Paunonen (2007) which revealed that extraversion was sometimes negatively related to academic performance. This negative relationship of the current study is also consistent with several studies (e.g. Chamorro-Premuzic & Furnham, 2003a; Chamorro-Premuzic & Furnham 2003b; De Feyter, Caers, Vigna, & Berings, 2012; Furnham & Chamorro-Premuzic, 2004; Hakimi, Hejazi, & Lavasani, 2011; O'Connor & Paunonen, 2007), which aimed to investigate the relationship between the Big Five personality traits and academic achievement in tertiary level.

The negative relationship may be best explained by the fact that extravert students are more sociable and more excited to be surrounded by people and are more likely to fail to balance between the time they spend on socialization and study. However, since there are some studies including this current study which found no significant relationship between extraversion and academic performance, it is too early to claim the negative relationship between extraversion and academic performance as a general rule without proper validation (O'Connor & Paunonen, 2007).

5.3. Implications for Theory and Practice

The results of the present study confirm that the correlation between conscientiousness and academic performance for tertiary level also exists in the Cambodian ELT context. The results are consistent with international studies and confirmed the trend identified before. In the agreement with the meta-analysis of O'Connor and Paunonen (2007), the present study opens the research agenda of personality traits and academic performance in the Cambodian

context by providing an empirical ground for investigating an association between personality traits and academic performance. Although the study does not confirm the significant predictive value of personality traits in acadmic performance, it reveals that there is a correlaton between the Big Five personality traits and academic performance. It, therefore, provides a foundation of the study exploring the prediction of academic performance of undergraduate students using the Big Five personality traits in Cambodian context.

Although the correlation between extraversion and academic performance is not significant, the results of the current study actually contribute to the current literature by confirming the fact that the negative association between extraversion and academic performance cannot be treated a general rule, and it needs further validation (O'Connor & Paunonen, 2007).

Furthermore, the results of present study reveal that the relationship between personality traits and academic performance, and incremental predictive validity of the Big Five personality traits in academic performance might be dependent on the major of the students (Furnham & Monsen, 2009) as well as the assessment procedures of the programme (Dollinger & Orf, 1991).

The results of the present research affirm the correlation between the Big Five factors and academic performance, and practical utility of using the Big Five factors to predict students' academic performance in tertiary level. Educational leaders and practitioners more specifically teachers and administrators should be aware that conscientiousness, extraversion, and openess to experience affect students' academic success. Therefore, the potential implications of the results of the study are associated with establishing a learning environment and reforming system and curriculum which foster a productive personality of the students.

Personality can be constantly changed during university years (McCrae & Costa Jr., 2003; Roberts & DelVecchio, 2000; Siegler, et al., 1990). The teachers, therefore, should

identify the students who have less productive personality traits in order to provide them with extra support so that they can be academically successful. Roberts and DelVecchio (2000) claimed that the consistency of the personality traits is dependent on some of the factors such as environment and identity patterns. In other words, personality traits can be cultivated and developed. For example, a student who is identified to be less conscientious can be augmented by providing supports and workshop in order to develop his/her time management and organizational skills. Furthermore, the teacher can establish intervention for developing students' conscientiousness in classroom basis. For instance, a teacher may ask the students to submit multiple drafts of the assignment along the way in order to ensure that students start working constantly and to avoid the last-minute work of less conscientious students.

Based on the finding of this study, in combination with past studies, the researcher argues that students personality traits should be taken into account by all educational leaders and practitioners because reinforcing positive personality traits of students is as important as imparting knowledge to them.

5.4. Limitation of the Study and Suggestions for Further Research

As with all studies, several limitations have been found in the current study. Limitation related to sampling technique and the criteria of measuring academic performance can be identified.

The research samples all enrolled in an undergraduate program majoring in English which is their second language. Therefore, it is immature to generalize the findings to other disciplines. Inclusion of samples studying different majors in future studies is highly recommended. The participants in the study have been selected by using stratified cluster sampling method in order to facilitate the process of requesting for students' GPA. Non-random selection of the samples makes it difficult to claim the representativeness of the

samples. Therefore, it is too ambitious to generalize the findings of the study in larger population without further investigation.

The academic performance of the students measured by their GPA from the last academic year. However, the participants were asked to complete the NEO Five-Factor Inventory-3 (NEO-FFI-3) more than a semester later. As personality traits of individuals in their 20s can be consistently changed (McCrae & Costa Jr., 2003; Roberts & DelVecchio, 2000; Siegler, et al., 1990), it is not so accurate to correlate the students' current personality traits with their past academic performance. However, the previous year GPA of the students was the latest academic GPA which could be accessed by the researcher. It is, therefore, recommended that in the future research the data should be collected right after the end of each academic year or right after the final exam in order to avoid any delay and change of the personality of the participants.

In conclusion, three suggestions for future studies can be made. First, given the fact that the present study was conducted only in the Department of English at one of the largest public university, it is recommended that the relationship between personality traits and academic performance should be investigated in other departments such as the Department of Thai, the Department of Chinese, the Department of Korea, and the Department of Japanese and in other faculties in other universities in Cambodia. Furthermore, that the nature of assessment procedures and the structure of exam paper have an impact on the relationship between personality traits and academic performance (Dollinger & Orf, 1991), the future research on the matter should take an account on the nature of the assessment of the program in which the participants enrolled. Lastly, several studies including the present one have confirmed that personality traits have impacts on student's academic success, yet how to foster positive traits among the learners remains unanswered. It is, therefore, of interest to conduct an experimental study to develop the strategies fostering productive traits.

5.5. Summary and Conclusions

The current study was conducted to examine the relationship between the Big Five personality traits and academic performance and to determine whether personality traits can be used to predict academic performance of students in tertiary education in Cambodia. Students' grade point average (GPA) was used as a measure of academic achievement, and the NEO Five-Factor Inventory-3 (NEO-FFI-3) was used to measure the Big Five personality traits.

The study was undertaken to seek for the answers to the above-mentioned research questions. Although some parts of the findings contradict the findings of the previous studies on the matter, the present study revealed some interesting results which are of help for researchers, educators, and individuals interested in the matter to better understand subject of matter.

The background of the study of the relationship between the Big Five personality traits and academic performance, the research problems, research objectives and questions, and the significance of the study were discussed in chapter 1. The review of previous literature and empirical studies were completed in chapter 2.

To answer the research questions, a comprehensive research methodology was developed and discussed in chapter 3. The results of the study were presented in chapter 4 followed by the discussion and implication in chapter 5.

In the analysis, descriptive statistics were calculated for all the variables of the study to explore the nature of the data collected. Correlations were computed between the Big Five personality traits, year of study, and academic GPA. The result of the data analysis confirmed that conscientiousness has a significant positive association with the academic performance. Since one of the research objectives was to examine the predictive value of the Big Five personality traits in academic performance, multiple regression analysis was conducted to

determine the incremental predictive value of the Big Five personality traits for academic performance. The regression result revealed that personality traits did not have a significant predictive value for the academic performance of the students.

The main purpose of the study is to provide a good foundation for future research on this matter, more specifically to open the research agenda on this matter in the Cambodian context, where research on educational psychology is most probably nonexistent.

The findings of the study serve as a framework for teachers who are interested in action research in classrooms in order to enhance their practical strategies to fostering students' academic achievement in the classroom level. Based on the consultation of the literature (e.g. Hakimi, Hejazi, & Lavasani, 2011; Komarraju, Karau, & Schmeck, 2009; Komarraju, Karau, Schmeck, & Avdic, 2011) and the findings of the current study, the implications of the study have been made on the enhancing the teaching pedagogy in tertiary education by highlighting potential strategies which can be used in classrooms to foster productive personality traits which enhance students' academic achievement. However, more studies should be conducted in the Cambodian context in order to develop more concrete evidence of the impact of the Big Five personality traits on academic success and to establish classroom strategies and intervention for developing the productive personality within the students.

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APPENDIX A: LETTER TO THE GATEKEEPER

May 9, 2018

Mr. Lim Leanghorng
#34Eoz, St110, Toul Kork, Phnom Penh, Cambodia

Mr. Tith Mab
Head of the Department
Department of English
Institute of Foreign Languages (IFL)
Royal University of Phnom Penh
Russian Federation Boulevard, Phnom Penh, Cambodia

RE: Seeking for permission to conduct a research study at the Department of English

Dear Mr. Tith Mab:

I am writing to ask for your permission to conduct research at Department of English of Institute of Foreign Languages (IFL), Royal University of Phnom Penh (RUPP) for a study titled "**The roles of Big Five personality traits in predicting undergraduate's academic achievement**".

This study is being conducted by **Lim Leanghorng**, a candidate in MA in TESOL programme from IFL, RUPP, as partial fulfillment of Master of Art in TESOL. The study is being supervised by Mr. **Chan Sophal**, a lecturer of the Department of English of IFL.

The aim of this study is to investigate the relationship between the Big Five Factors of personality traits and academic achievement of students in Department of English of IFL, RUPP. The findings will highlight several potential strategies for educators to use in constructing positive personality traits of students and enhancing students' achievement by taking students' personality traits into account.

Nine classes, one from each cohort and each shift, have been selected for the study through cluster random sampling technique. For the purpose of this research study, I would like to:

1. Request for your permission to collect data from students who in academic year 2016-2017 were in class of **M1.3, A1.6, E1.2, M2.1, A2.4, E2.3, M3.1, A3.2,** and **E3.3**. The data collection is in a form of survey using NEO Five-Factor Inventory-3 questionnaire made up of 60 items which can be taken home and completed by participants within 15-20 minutes. The data collection is expected to start as soon as the permission given and to finish in June 2018.
2. Request for the 2016-2017 academic record of the students in the above-mentioned classes in order to run correlation between students' traits and their academic performance.

If you have any questions or require more information about this study, please contact **Lim Leanghorng** by phone at (855) 92 881 809 or by email at limhorng@gmail.com.

I look forward to hearing positive response from you soon.

Yours Sincerely,

Mr. Lim Leanghorng
MA in TESOL candidate
Institute of Foreign Languages
Royal University of Phnom Penh

Mr. Chan Sophal
Lecturer
Department of English
Institute of Foreign Languages
Royal University of Phnom Penh

Dr. Khan Bophan
Coordinator of MA in TESOL program
Institute of Foreign Languages
Royal University of Phnom Penh

Approved
22/05/2018

APPENDIX B: DATA MANAGEMENT PLAN

Thesis Research Project

"The roles of Big Five personality traits in predicting undergraduate's academic achievement"

Data Management Plan

Dear Mr. Tith Mab:

First of all, I would like to extend my sincere gratitude to you for allowing me to conduct research at the Department of English. To address the Department's concern regarding data management including students' identity and Grade Point Average (GPA), I am writing to inform you of the types of data to be collected and how the collected data and the participants' identity will be managed and protected.

Participants of the study are invited to voluntarily complete a set of questionnaires which includes their personal information and NEO Five-Factor Inventory-3, a 60-item questionnaire to measure their personality traits. All participants are informed that if they agree to participate in the study, they will allow the researcher to request for their GPAs from the Management Team of the Department of English of IFL, RUPP.

The participants' responses will remain confidential and will be used for the purpose of this study only. Any kind of information disseminated in public through research report and presentation will not include any information which will make it possible to identify them. Only the researcher, **Mr. Lim Leanghorng**, and the research supervisor, **Mr. Chan Sophal**, will have access to the information provided including GPAs.

Students' GPAs will not be disclosed to the third party. The identity of the participants and their GPAs will be kept strictly confidential. If the Department decides to print out the lists of students and their GPAs, the hard-copy files will be stored in a secure place, where access is off-limits to the third party. I sincerely believe that all information provided by the Department regarding the participating students will be treated with highest security and confidentiality.

Once again, I, hereby, reassure you that the participants' individual responses, GPAs and all the data collected will remain confidential and be used for the purpose of this study only.

Sincerely Yours,

Mr. Lim Leanghorng
MA in TESOL candidate
Institute of Foreign Languages
Royal University of Phnom Penh

Mr. Chan Sophal
Lecturer
Department of English
Institute of Foreign Languages
Royal University of Phnom Penh

APPENDIX C: QUESTIONNAIRE

Thesis Research Project:

The roles of Big Five personality traits in predicting students' academic achievement

Questionnaire

ID# _____

I. Introduction

Dear participants:

You are cordially invited to participate in a research study as a partial fulfillment of my master's degree in TESOL at Institute of Foreign Languages (IFL), Royal University of Phnom Penh. This study focuses on **the roles of Big Five personality traits in predicting students' academic achievement**. The findings of this study will be presented and summitted to IFL to fulfil requirement of master's degree in TESOL.

You are invited because you have been randomly selected as a representative sample for all students in the Department of English of IFL in your cohort.

If you agree to participate in this study, you will respond to the questionnaire which is enclosed, and you agree to allow the researcher to access your GPA. Your answers and GPA will remain confidential and only the researcher will have access to your responses. Your participation is entirely voluntary. The findings of the study will be beneficial to teachers, school management team, policy makers, and other interested individuals to make informed instructional decisions based on students' personality traits.

It will take you no more than **20mns** to complete the questionnaire.

I look forward to receiving your responses.

Yours Truly,

Lim Leanghorng

MA in TESOL Student, IFL

II. Questions

Personal Data

1. Sex: ☐ Male ☐ Female ☐ Other
2. Age: _____
3. Year of study (AY2016-2017): ☐ Year 1 ☐ Year 2 ☐ Year 3
4. Shift of study (AY2016-2017): ☐ Morning ☐ Afternoon ☐ Evening

Personality Traits

Direction: There are 60 statements. Read each statement carefully. For each statement, please **circle** the response which **best represents your opinion** as the followings:

0= Strongly Disagree, 1= Disagree, 2=Neutral, 3=Agree, 4=Strongly Agree

Descriptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am not a worrier.	0	1	2	3	4
2. I like to have a lot of people around me.	0	1	2	3	4
3. I enjoy concentrating on a fantasy or daydream and exploring all its possibilities, letting it grow and develop.	0	1	2	3	4
4. I try to be polite to everyone I meet.	0	1	2	3	4
5. I keep my belongings neat and clean.	0	1	2	3	4
6. At times I have felt bitter and resentful.	0	1	2	3	4
7. I laugh easily.	0	1	2	3	4
8. I think it's interesting to learn and develop new hobbies.	0	1	2	3	4
9. At times I bully or flatter people into doing what I want them to.	0	1	2	3	4
10. I'm pretty good about pacing myself so as to get things done on time.	0	1	2	3	4
11. When I'm under a great deal of stress, sometimes I feel like I'm losing control.	0	1	2	3	4
12. I prefer jobs that let me work alone without being bothered by other people.	0	1	2	3	4
13. I am very interested in the patterns I find in art and nature.	0	1	2	3	4
14. Some people think I am selfish and self-centered.	0	1	2	3	4
15. I often come into situations without being prepared.	0	1	2	3	4
16. I rarely feel lonely or sad.	0	1	2	3	4
17. I really enjoy talking to people.	0	1	2	3	4
18. I believe letting students hear controversial speakers can only confuse and mislead them.	0	1	2	3	4
19. If someone starts a fight, I'm ready to fight back.	0	1	2	3	4
20. I try to perform all the task assigned to me carefully.	0	1	2	3	4
21. I often feel tense and nervous.	0	1	2	3	4
22. I like to be at a very active and exciting place.	0	1	2	3	4
23. Poetry has little or no effect on me.	0	1	2	3	4
24. I'm better than most people, and I know it.	0	1	2	3	4
25. I have a clear set of goals and work toward them in an orderly fashion.	0	1	2	3	4

Descriptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
26. Sometimes I feel completely worthless.	0	1	2	3	4
27. I shy away from crowds of people.	0	1	2	3	4
28. I would have difficulty just letting my mind wander without control or guidance.	0	1	2	3	4
29. When I've been insulted, I just try to forgive and forget.	0	1	2	3	4
30. I waste a lot of time before starting to work.	0	1	2	3	4
31. I rarely feel fearful or anxious.	0	1	2	3	4
32. I often feel as if I'm having a lot energy.	0	1	2	3	4
33. I seldom notice the moods or feelings that different environments produce.	0	1	2	3	4
34. I tend to assume the best about people.	0	1	2	3	4
35. I work hard to accomplish my goals.	0	1	2	3	4
36. I often get angry at the way people treat me.	0	1	2	3	4
37. I am a cheerful, active person.	0	1	2	3	4
38. I experience a wide range of emotions and feelings.	0	1	2	3	4
39. Some people think of me as unfriendly and tricky.	0	1	2	3	4
40. When I make a commitment, I can always be counted on to do it.	0	1	2	3	4
41. Too often, when things go wrong, I get discouraged and feel like giving up.	0	1	2	3	4
42. I don't get much pleasure from chatting with people.	0	1	2	3	4
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave or excitement.	0	1	2	3	4
44. I have no sympathy for beggars.	0	1	2	3	4
45. Sometimes I'm not as dependable or reliable as I should be.	0	1	2	3	4
46. I am seldom sad and depressed.	0	1	2	3	4
47. My life is busy.	0	1	2	3	4
48. I have little interest in speculating on the nature of the universe or the human condition.	0	1	2	3	4
49. I generally try to be thoughtful and considerate.	0	1	2	3	4
50. I am a productive person who always gets the job done.	0	1	2	3	4
51. I often feel helpless and want someone else to solve my problems.	0	1	2	3	4
52. I am a very active person.	0	1	2	3	4
53. I have a lot of intellectual curiosity.	0	1	2	3	4
54. If I don't like people, I let them know it.	0	1	2	3	4
55. I never seem to be able to get organized.	0	1	2	3	4

Descriptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
56. At times I have been so shamed I just wanted to hide.	0	1	2	3	4
57. I would rather go my own way than be a leader of others.	0	1	2	3	4
58. I often enjoy playing with theories or abstract ideas.	0	1	2	3	4
59. If necessary, I am willing to manipulate (**make use of**) people to get what I want.	0	1	2	3	4
60. I strive for excellence in everything I do.	0	1	2	3	4

Validity Checks

1. Have you responded to all of the statements? ☐ Yes ☐ No
2. Have you responded accurately and honestly? ☐ Yes ☐ No

Thank you!