

MODERATION OF COGNITIVE AND EMOTIONAL CREATIVITY IN THE
RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND ACADEMIC
ACHIEVEMENT

MAHNAZ KABOODI

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This thesis is dedicated to my family for their endless support and encouragement.

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ABSTRACT

The main aim of this study is to compare the moderation role of emotional creativity and cognitive creativity in the relationship between emotional intelligence and academic achievement. For this purpose, 472 undergraduate students in Universiti Teknologi Malaysia were selected based on cluster sampling method. For measuring the variables in this study, three questionnaires consisting of Trait Emotional Intelligence Questionnaire- Short Form (TEIQue-SF), Abedi Cognitive Creativity Test and Averill Emotional Creativity Inventory were used to respectively measure emotional intelligence as the predictor, as well as cognitive creativity and emotional creativity as moderators among students. Academic achievement as predicted variable was evaluated based on Grade Point Average score. The results demonstrated that emotional intelligence is related to academic achievement whilst two sub-constructs of emotional intelligence, namely emotionality and sociability were related with academic achievement. Findings revealed the moderation role of emotional creativity in the relationship between emotional intelligence and academic achievement was confirmed. Moreover, the results of this study demonstrated that the relationship between emotional intelligence and academic achievement in students with high emotional creativity is stronger than the group with low emotional creativity. The results of this study are valuable for educational system, policy makers, students and lecturers, particularly in higher education to emphasize on emotional aspect in teaching and learning and to integrate the emotional aspect in the curriculum of universities.

ABSTRAK

Tujuan utama kajian ini adalah untuk membandingkan peranan kreativiti emosi dan kreativiti kognitif sebagai moderator dalam hubungan antara kecerdasan emosi dengan pencapaian akademik. Bagi tujuan ini, 472 pelajar sarjana muda dari Universiti Teknologi Malaysia telah dipilih berdasarkan persampelan kluster. Bagi mengukur pembolehubah- pembolehubah dalam kajian ini, tiga soal selidik yang mengandungi Soal Selidik Kecerdasan Emosi-Borang Ringkas, Ujian Kreativiti Kognitif Abdedi, dan Inventori Kreativiti Emosi Averill telah digunakan untuk mengukur kecerdasan emosi sebagai peramal serta kreativiti kognitif dan kreativiti emosi sebagai moderator dalam kalangan pelajar. Pencapaian akademik sebagai pembolehubah peramal dinilai berdasarkan skor Purata Poin Gred. Dapatan kajian menunjukkan bahawa kecerdasan emosi mempunyai hubungan dengan pencapaian akademik manakala dua subkonstruk kecerdasan emosi iaitu emosi dan sosial mempunyai dengan pencapaian akademik. Dapatan kajian membuktikan kedapatan peranan moderator kreativiti emosi dalam hubungan antara kecerdasan emosi dengan pencapaian akademik. Tambahan pula, dapatan kajian juga menunjukkan hubungan antara kecerdasan emosi dengan pencapaian akademik dalam kalangan pelajar yang tinggi tahap kreativiti emosi adalah lebih kuat daripada kumpulan yang rendah kreativiti emosi. Dapatan kajian ini penting bagi sistem pendidikan, penggubal dasar, pelajar-pelajar dan pensyarah-pensyarah, terutamanya dalam pengajian tinggi untuk menekankan aspek emosi dalam pengajaran dan pembelajaran serta untuk mengintegrasikan aspek emosi dalam kurikulum universiti.

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LIST OF ABBREVIATIONS

<i>AA</i>	-	Academic Achievement
<i>CC</i>	-	Cognitive Creativity
<i>EC</i>	-	Emotional Creativity
<i>ECI</i>	-	Emotional Creativity Inventory
<i>EI</i>	-	Emotional Intelligent
<i>EIS</i>	-	Emotional Intelligence Scale
<i>GPA</i>	-	Grade Point Average
<i>IQ</i>	-	Intelligent Quotient
<i>MSCEIT</i>	-	Mayer, Salovey and Caruso Emotional Intelligence Test
<i>TEIQue- SF</i>	-	Trait Emotional Intelligence Questionnaire- Short Form
<i>TTCT</i>	-	Torrance Test of Creative Thinking
<i>TESL</i>	-	Teaching English as Second language

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The belief that intelligence plays the most vital role in academic achievement (McCall, 1977; Deary *et al.*, 2000) has received criticism, hence drawing research interest to other types of intelligence such as emotional intelligence (EI). Emotional intelligence is defined as the capacity of understanding the meaning of emotions and adjusting them so that they boost thinking and performance (Noureen *et al.*, 2011). By applying emotions efficiently, mental abilities of people are facilitated to guide them to the better results. Therefore, an emotional intelligent person is able to recognize, understand and manage his/ her own and others' emotions to achieve their goals easily and efficiently (Bar- on, 2006). Briefly, emotional intelligence is the capacity of understanding the meaning of emotions and adjusting them so that they boost thinking and performance (Noureen *et al.*, 2011).

Emotional intelligence has been recognized as a significant factor in the success of people in personal health, social relationship, education and job performance (Mayer, 2008). In other words, EI contributes to many important life outcomes that imply successful living. Proponents of EI have made strong claims about the importance of EI in activities which seem to be performed on the basis of cognitive and mental skills like learning and academic achievement (Busato, *et al.*, 2000; Ivan, 2011, Shekarey, *et al.*, 2011). The concept of Academic Achievement (AA) reflects mental capacities while its multidimensional nature (Abisamra, 2000) indicates the effects of mental and other factors such as emotional intelligence

(Veitch & Justice, 2012). Based on the characteristics of EI and AA, it is clear that EI has the emotional capacity which promotes mental skills (Blanco, 2010) while AA is the result of the issue produced by mental and non- mental abilities (Busatoa, *et al.*, 2000). In other words, emotional intelligence is an emotional skill while academic achievement seems the production of cognitive abilities.

Academic achievement is affected by factors categorized as mental, emotional and environmental (Iftekhhar, 2011) as well as “family”, “school”, “society” and “motivational factors” (Khajehpour, 2011). Some studies highlighted the effect of “demographic and socio-psychological” factors such as EI in predicting AA (Aremu *et al.*, 2006). On the other hand, some studies reject EI as the most significant predictor of AA (Parker *et al.*, 2002; Berenson *et al.*, 2008). While some studies showed positive relationship between EI and academic achievement (Nita, 2008; Ogundo & Ademyemo, 2010; Fallahzadeh, 2011; Wallsh- Portillo, 2011) other findings rejected this link and showed there is no relation between these variables (Bastian *et al.*, 2005; Talarico *et al.*, 2008). When the relationship between two variables is contradictory, it signifies the moderating role of other variables in this relation (Frazier, 2004). The contradictory results in the abovementioned studies pertaining to the relationship between EI and AA provides the basis for studying the moderating role of other variables in this relation, particularly variables related the emotions and intelligence in EI.

In essence, EI involves other intelligence- related factors such as creativity as influential factors on academic achievement. As suggested by Peter and Jones (2007), intelligence alone may not be the only important factor contributing to academic achievement while the element of creativity is said to have relation with both emotional intelligence (Martndale, 1999) and academic achievement (Minzhenli *et al.*, 2011). To achieve academic goals, students should be capable of solving their problems whilst EI and the ability related element of creativity can assist them in the process of problem solving. In its broad sense, creativity has been identified by Guilford as the problem solving skill (Khamse, 2006; Simpson, 2012, Sanchez-Ruize *et al.*, 2011). EI has also been defined as the capacity that applies emotion to promot thinking for problem solving (Rohani, 2008). Thus, both EI and creativity have

played role in improving problem solving ability of students to achieve their academic goals successfully.

Based on the definition of creativity, a cognitively creative student is the one who is mentally able to apply fluent, elaborative, original and flexible solutions for academic and social problems (Sanchez- Ruiz *et al.*, 2011). Thus, emotional intelligent people can be identified as creative individuals who are able to utilize their emotions skillfully and creatively. Based on the common characteristics of creativity, it can be concluded that creativity assists creative people to apply their previous and usual methods in a new way or to create a new style for achieving their goals (Blanco, 2010). Therefore, it can be concluded that emotional intelligent people and the creative ones have a set of similar characteristics that can indicate on the relationship between emotional intelligence and creativity (Sanchez-Ruiz *et al.*, 2011).

Besides EI and CC, another variable that affects AA and relates to EI is emotional creativity (EC). According to Averill, emotional creativity is the capacity to feel and demonstrate emotions truly and in particular way that he/ she can cope with the intrapersonal and interpersonal needs in particular conditions (Gutbezahl & Averill, 1996). Averill (1999b) believes that EC differs in low and high rates: at the lowest level, emotional creativity involves effective application of an already existing emotion, one found within the culture; at a more complex level, it involves the modification of a standard emotion to better meet the needs of individual or group and at the highest level, it involves the development of a new form of emotion, based on a change in the beliefs and rules by which emotions are constituted.

Both emotional intelligence and emotional creativity have the emotional related capacities (Munro *et al.*, 2008) which influence the success of people. Emotionally intelligent people are emotionally creative because they know how to use their usual emotions in a new, irregular and flexible way to cope with problems and catch their goals. These characteristics are seen present in creative people.

An emotional intelligent student is viewed as a social and emotional person who uses a combination of emotions to solve the problem (Brackett & Mayer, 2004). Emotionally creative students are the ones who are capable of applying novel, effective and authentic emotions (Averill, 2004) to succeed in the academic situation (Ai, 1999; Olatoye *et al.*, 2010). Therefore EI and EC can foster each other (Averill, 1999; Ivcevic *et al.*, 2007; Lee *et al.*, 2008) and their interaction can increase the probability of success in areas such as AA.

EI was viewed based on trait emotional intelligence model while other approaches view EI through different perspectives. For instance, “ability model” of Salovey and Mayer, “mixed model” of Daniel Goleman and “emotional- social” model of Baron (Hebert, 2011) define EI based on diverse criteria. Creativity as the moderator was viewed from both emotional and cognitive perspectives and academic achievement as the predicted variable was seen as the product of cognitive procedures affected by emotional capacities of learner.

EI is based on trait emotional intelligence model while cognitive creativity was highlighted on the basis of cognitive creativity theory of Torrance and emotional creativity theory was viewed through Averill theory. To assess EI, EC and CC, TEIQue-SF, Averill Emotional Creativity Inventory and Abedi Cognitive questionnaire were used. The sample included 472 undergraduate Malaysian students who were randomly selected from the population of Universiti Teknologi of Malaysia (UTM).

1.2 Background of the Study

Emotional intelligence is rooted in expanded studies and approaches about thinking, emotions and capacities. Various approaches have been employed to study EI. According to Farrelly and Austin (2007), there are two “standards” in studying EI: one domain relates to the research which focuses on how diversity in emotional intelligence pertains to the elements of real life like social interaction, well-being and comfort. Studies demonstrated that there is positive relationship between EI and

mental and biological well-being, “life satisfaction”, social interaction academic achievement and job performance. While negative relationship was estimated between EI and compartments like “smoking”, drug- abuse, psychological problems, feeling lonely and “depression”.

The second approach in studying EI focuses on assigning the most suitable “model” and measuring instruments where “ability” and “mixed” models were used to measure EI. In ability approach, EI is defined as the ability like intelligence and is measured through “performance” and tasks while in trait approach which is based on mixed model, EI is interpreted as the combination of abilities and other “personality traits” and is assessed by self report tools (Farrelly & Austin, 2007).

Despite the increase in the number of researches on the relationship between EI and other variables, the knowledge about emotional intelligence is limited to just some aforementioned variables like well being, job performance and academic achievement. In the domain of academic performance, other than EI as an influencing factor, studies indicated that cognitive abilities such as IQ and problem solving skills were influential factors. Theoretical underpinnings from Thorndike’s theory on social intelligence and the idea of Wechsler about the necessity of “non-intelligence” skills in predicting capacity to succeed in life implies the influence of non-cognitive factors on AA. The ideas of Goleman pertaining to the effect of “several intelligences” under the control of emotion (Vahedi & Nikdel, 2011) changed the trend of studies to areas other than IQ which focuses on emotional aspects.

In the domain of academic performance, the primary studies indicated that cognitive abilities such as IQ and problem solving skills were influential factors. In addition to the influence of cognitive elements on EI, theoretical underpinnings from Thorndike’s theory on social intelligence and the idea of Wechsler about the necessity of “non-intelligence” skills in predicting capacity to succeed in life implies the influence of non-cognitive factors on AA. The ideas of Goleman pertaining to the effect of “several intelligences” under the control of emotion (Vahedi & Nikdel, 2011) changed the trend of studies to areas other than IQ.

There is a substantial research focusing on education and the results of most of these studies confirm this relationship (Veitch & Justice, 2012). For instance, EI regarded as a kind of soft skills and as a factor related to academic achievement has been highlighted in higher education of Malaysia. However, there is limited number of studies on factors which moderate this relationship.

In a literature review pertaining to the development of emotional intelligence, Higgs and Hender (2006) found that many authors and Mayor and Salovy have offered the relationship between EI and creativity. Although, they believe that limited number of researches have been done to confirm this subject. Creativity is the variable that has attracted the attention of some experts as a factor that influences the success of people in life (Ivecevic *et al.*, 2007). Research in the domain of creativity over the last four decades has suggested that some level of creativity is required in almost every job (Lee & Tan, 2012).

Studies related to the relationship between EI and creativity require a new trend because of the deficits in this area of studies. For instance, Sanchez Ruize *et al.* (2011) declare that just a restricted number of studies have been conducted about creativity in relation with particularly EI trait. Moreover, based on the report of European University Association (Egmont, 2007), the way of promoting creativity and innovation in academia have not been focused on even in European countries. The results of the survey done by this center demonstrated that staff and students of 32 institutions from 21 countries pointed out to the relationship with professional resources inside and outside university as one of the influential factors in fostering creativity. However, they believe that enough relationship between higher education and other resources especially outside of university has not been observed.

The results of studies on creativity, emotional intelligence and their relation can be beneficial for students in all aspects of life. However, the number of research done in this area is very limited. This subject has been confirmed by Gutbezahl and Averill (1996) that suggest the research in the domain of emotion and creativity is ignored but emotional creativity was completely forgotten. Similarly, Ivecevic *et al.* (2007) have confirmed these results and declared that no study in the area of

relationship between emotional intelligence and emotional creativity was done until 2007. Moreover, based on the report of China Papers (2010), just a limited number of practical studies have been done in the area of EC in China.

Regarding the significance of the relationship between emotional skills, creativity and academic achievement and based on the sample selected among Malay students, some limited studies conducted in the population of Malaysia will be reported in the following as the background of this study. Some of these studies are reflecting the problems that students may face with in the process of conducting academic duties while some other researchers report the effect of emotional capacities in coping with these problems and reaching academic goals.

For instance, Vitasari *et al.* (2011a) in a study on 770 university students categorized seven influential factors that cause students social anxiety. These factors are consisting of “problem with peers”, “uncomfortable hostels for studying”, “face problems with roommates”, homesick”, “uncomfortable area for studying”, “racial diversity”, “high number of students in one room” and “studying difficulties”. Similarly, based on the study of Alavi (2011) on 135 students in Universiti Technology of Malaysia, one of the signified problems of students pertains to the academia has been pointed by participants were curriculum and methods of teaching.

According to the study of Vitasari *et al.* (2011c), 137 university students in Malaysia were studied to signify the influence of emotions on AA. The findings indicated that biological stimulation and mental anxiety reduce AA measured by GPA. Education is an influential factor in healthy of students. In the other survey conducted by Naderi *et al.* (2009) in Malay universities, 153 unedrgraduate female and male students were studied. The results showed the relationship between creativity as the personality trait and AA.

Consequently, this study focused on clarifying the situation of creativity in the relationship between EI and academic achievement to compare the role of emotional creativity with cognitive creativity as the moderators in this link. By signifying the stronger moderators of this relation, the scientific background will be

provided for flourishing training programs for improving EI skill in people and increasing the probability of the prosperous of people in the different areas of life like academia.

1.3 Statement of Problem

Emotional intelligence has been proved as a contributing factor for academic achievement. Critiques and findings from research point to other possible factors which could strengthen this relationship. Therefore, a more comprehensive study on the relationship between EI and AA should consider other issues which are contributing to the effect of emotional and personal factors on the development of students and their AA (Nelson & Low, 2003).

The relationship between emotional intelligence and academic achievement is generally agreed among researchers (Fallahzadeh, 2011; Wallsh- Portillo, 2011) but the role of moderating factors on this relation is not clear. Many studies have been done pertaining to emotional intelligence, most of them have been conducted in particular areas like management and for the cases as leaders, employers, employees and workers while the number of such studies in academia particularly, universities are insufficient (Kracher, 2009).

In addition, some gaps are distinguishable in the scope and approaches to emotional intelligence. In most of the studies, EI has been highlighted based on ability and mixed model while the trait approach to EI has been less considered (Pereze, 2005). Moreover, the relationship between EI and other variables has mostly been focused in order to signify this relation while just a few researches have been conducted with concentration on moderating factors on this relation. Therefore, enough studies with the concentration on middle factors in the relation between EI and academic achievement may not be found.

Both EI and creativity have been recognized as the variables that are positively related to academic achievement (Lotfi *et al.*, 2011; Sawitri & Riani, 2012).

Creativity is a capacity that has been emphasized on literature not only as a related variable with EI (Lee *et al.*, 2008; Sanchez Ruiz *et al.*, 2011) but also as an influential factor in development of societies. But its practical aspect has not been so concerned and most of the presented materials in this area are not enough for applying this issue in real life situations. Therefore, educational centers particularly universities (Egmond, 2007) are expected to provide the conditions for fostering creativity in both knowledge and application areas but this subject has not been considered so much even in academia such as universities (Naderi, *et al.*, 2009).

According to the literature review done by Greene (2001) on the seventy models of creativity, it was found that there is a shortage in the literature relating to creativity. The relationship between creativity and academic achievement is a challenging subject that causes researches to interpret this relationship diversely (Naderi *et al.*, 2009). Particularly the number of researches, thesis and articles that simultaneously focus on the role of two kinds of creativity consisting of emotional and cognitive creativity (CC) as the moderators and in the relation between EI and AA are so limited.

The effect of EI on the relationship between non mental skills and AA should be considered as much as the influence of EI in the relationship between EI and mental abilities (Chamorro-Premuzic & Furnham, 2006). Therefore, Ivecevic *et al.* (2007) suggest the other researchers to study the relationship between EI and EC for solving the problems in emotional circumstances. They believe this trend may change the current view to the meaning of problems and formulating the right and suitable resolutions for solving the emotionl and cognitive problems.

Based on this background, researcher has hypothesized that in the link of emotional intelligence and academic achievement, the role of mental abilities are not so crucial in academic achievement (Monk, 1998) therefore an emotionally intelligent individual may have the other skills to be successful in doing academic tasks. The key component in emotional intelligence is emotional capacity (Chumpan, 2012) while a set of mental abilities are expected to be effective in achieving academic goals (Shekarey, *et al.*, 2011). Therefore, it is predicted the skill

that occur in this link may have both cognitive and emotional nature something like creativity (Saracho, 2012). The emotionally intelligent person may be a creative individual who knows how to achieve successfully his/ her goals without having enough knowledge or experience on that area. But if such creative people apply their emotional intelligence to be successful, which kind of creativity relates to success: emotional creativity or cognitive creativity?

Consequently, the purpose of this study is to signify whether creativity is a moderator in this relation or not and if it is, which kind of creativity is the stronger moderator, cognitive creativity or emotional creativity. This topic has been chosen in view of the insufficient empirical evidence of factors influencing the relationship between EI and AA. This study is conducted to determine the moderating effects of emotional creativity and cognitive creativity in this link.

1.4 Research Objectives

The main objective of this study is to expand the knowledge pertaining to EI, creativity and their relation with academic achievement. Therefore, clarifying the real nature of EI and creativity in relation with academic achievement is the main goal of this research. By focusing on the objectives of this study, the scientific background for identifying EI and creativity as the related factors with academic achievement will be provided. Based on the purpose of the study, the objectives are as follows:

1. To identify the relationship between emotional intelligence and academic achievement among UTM undergraduate students.
2. To identify the moderation role of emotional creativity in the relationship between emotional intelligence and academic achievement among UTM undergraduate students.
3. To determine the moderation role of cognitive creativity in the

relationship between emotional intelligence and academic achievement among UTM undergraduate students.

1.5 Research Questions

Research questions that were addressed in this study are as follows:

1. Is there any relationship between emotional intelligence and academic achievement among UTM undergraduate students?
 - a. Is there any relationship between emotional intelligence constructs and academic achievement among UTM undergraduate students?
2. Does emotional creativity moderate the relationship between emotional intelligence and academic achievement among UTM undergraduate students?
 - b. Is there any significant relationship between emotional intelligence and academic achievement across high and low levels of EC among UTM undergraduate students?
3. Does cognitive creativity moderate the relationship between emotional intelligence and academic achievement among UTM undergraduate students?

1.6 Hypothesis

The followings are the null hypotheses that were studied in this research:

- H01 There is no significant relationship between emotional intelligence and academic achievement among UTM undergraduate students.
- a. There is no significant relationship between emotional intelligence constructs and academic achievement among UTM undergraduate students.
- H02 Emotional creativity does not moderate the relationship between emotional intelligence and academic achievement among UTM undergraduate students.
- a. There is no significant relationship between emotional intelligence and academic achievement across high and low levels of EC among UTM undergraduate students?
- H03. Cognitive creativity does not moderate the relationship between emotional intelligence and academic achievement among UTM undergraduate students.

1.7 Significance of Study

This study aims to investigate the moderating effect of emotional creativity and cognitive creativity in the relationship between emotional intelligence and academic achievement. It is hoped that the findings of this study will contribute to various parties involved directly or indirectly to the academic achievement of undergraduates, particularly in UTM. In its border perspective, it is hoped that the findings will contribute to the educational setting in its theoretical and practical aspects.

Department of Higher Education in Malaysia has instructed all institutions of higher learning to incorporate into their curriculum with skills that could improve

students' knowledge and capacities to prepare them for future job market (MHEO, 2012). With this policy, the emphasis in higher education is not only on scientific knowledge per se but also incorporates soft skills such as team working, problem solving, decision making, leadership, and communicating skills. Therefore, findings from this study is able to shed some light to inform policy makers and curriculum developers on factors related to academic achievement. Subsequently, universities could initiate strategies to enhance academic achievement and produce graduates who are more competent to join the job market upon graduation.

Psychologists do not lose their time on intelligence as the most important factor on cognitive, empirical tasks and learning. Instead, their attention has been focused on EI as the key factor in success in all kinds of cognitive and non-cognitive tasks. According to Goleman (1994) just 20% of success depends on intelligence and majority of it is influenced by emotional and social intelligence and luck. Based on Goleman declaration, there are capacities more significant than "academic intelligence" for being more successful in jobs and individual, academic and interpersonal areas (Bharti & Sidana, 2012). This result has been confirmed by other research that demonstrates the positive effect of EI on personality and academic achievement of students (Peter & Jones, 2007). Such emphasis has encouraged other researchers to focus on the role of non-mental factors such as EI on education (Abraham, 2006; Stottlemayer, 2002).

Education and academic performance have been identified as the focal priority in developing humans and societies (Nwadinigwe & Azuka-Obieke, 2012), thus they require deeper attention. According to the educational experts, knowledge and skills are essential prerequisites for AA ;however, they are not adequate and a set of predictors such as cognitive abilities, personality and self-esteem have been found as the predictors of AA. The results of studies accentuate on the significant relationship between non-cognitive subjects like EI with AA (Colom *et al.*, 2007, Van Der Zee *et al.*, 2002, Higbee *et al.*, 2005) and some such as Plato declare that all kinds of learning has an emotional base (Abdolrezaipoor & Tavakoli, 2012). The significant role of EI in AA was more highlighted when the results of many studies identified EI as the most significant predictor of AA (Parker *et al.*, 2002 & 2003;

Low & Nelson, 2004; Olatoy, 2010). Based on the studies, students with high EI have the social skills such as “needed motive”, the capacity to “remain expectant”, rule following, seeking assistance and the skill of expressing educational and emotional needs (Radfar *et al.*, 2012).

In addition to EI, the capacities such as creativity is required for achieving academic goals because creative people are equipped with “thinking skills” that consist of “personality characteristics” accompanied by creativity, the ability to compare issues and the capacity to view the frequency of diverse ideas (Sawitri & Riani, 2012). The life condition of students with different responsibilities necessitates the capacities to assist them in dealing with problems and managing duties. According to Olofintoye and Tunde (2011), among the important needs of undergraduate students, the needs related to academic performance has been defined as the “adjust needs”, mentioned by students. The students who are not successful in achieving their academic goals seem to be influenced by different factors such as “behavioral and emotional problems” while the students with “healthy psychological functioning”, and “positive self- concept” are prosperous in their academic conduct (Annunziata *et al.*, 2006; Dryfoos, 1990).

In addition to personal and social aspects of students’ life that are influenced by emotional intelligence, the important factors which underline and promote these relations are important. Because recognizing the moderating factors fostering this relation increases the probability of success in these areas. For instance, creativity is a significant issue recognized as the capacity fostered by EI (Yagi *et al.*, 2010) while it can also affect academic achievement (Sawitri & Riani, 2012). Therefore, highlighting creativity in the relationship between EI and academic achievement can clarify the real quality of this relation. Moreover, the influential factors on this relation can be recognized as the means for promoting this link. The effective role of creativity in our life is an obvious subject because every day we face new changes in all aspects of life that can be positively influenced by creativity. Creativity is not only a means for adapting with changes but also a stimulus for producing knowledge in different fields of study.

In addition, creative students are facilitated with problem solving ability and this subject has been confirmed by the findings of other studies that demonstrate the stages of creativity and problem solving are extensively similar. This assimilation is so emphasized that some experts define problem solving as part of mental procedures which occur in creativity. For instance, Matlin (2009) declares that problem solving is an “active cognitive” procedure and the problem solvers use mental activities like designing a program, dividing the problem to its elements and applying methods for solving problems. They also have methods to find a quick and relative solution and apply their “meta cognition” to know whether their solutions are useful or not. All these procedures can be facilitated by emotions. According to Salovey and Mayer, emotions facilitation refers to appropriate usage of emotions during mental activities such as problem solving and creativity (Lee *et al.*, 2008). Consequently, positive emotions can expand creativity by enhancing flexibility and depth of thinking (Cherry, 2012).

Therefore, the roles of emotional intelligence and creativity in problem solving are somehow the same. It means that when a person is emotionally intelligent, he/ she is more skillful in employing his/ her emotions to foster the mental procedure in managing the situation properly and in solving the problems suitably (China Paper, 2010). These are a set of skills which are applied by emotionally intelligent and creative people. Thus, an emotional intelligent individual is a creative person (Ivecevic *et al.*, 2007) who knows how to solve the problems and make decisions in different situations. Therefore, emotional intelligence and creativity are the issues contributed to problem solving and can be beneficial for students to cope with their problems relating to educational duties and social relationship.

In spite of the emphasis of the experts on mental dimension of creativity, it has been defined as a phenomenon consisting of mental and non-mental aspects. However, traits and “emotional factor” are pointed out as the main components in presenting creativity (San’chez-Ruizet *al.*, 2011). Regarding the close link between creativity and emotion, accurate studies are required in the area of emotional creativity as the skill for adjusting feelings in different circumstances. However, the

emphasis of experts on both dimensions of creativity consisting of cognitive and emotional aspects is the logical reason that encourages the researcher to compare these two types of creativity in the relationship between EI and academic achievement.

By defining the significant moderator, the influential factor in relationship between EI and academic achievement will appear. These results will be applicable for students, experts and education authorities to focus on more important moderators as a means for increasing the success of students in all areas of life such as academic achievement. Actually, the factors such as emotional creativity can moderate the relationship between emotional intelligence and academic achievements. The interaction of emotional creativity with emotional intelligence can promote emotionality and divergence of students in the process of catching academic goals. Emotional intelligence can foster sociability and concentration of emotional creative students while emotional creativity can assist students to apply divergent method of applying emotions in the process of academic achievement.

1.8 Scope of Study

The current study covers four variables, namely emotional intelligence, emotional creativity, cognitive creativity and academic achievement. EI was treated as predictor to academic achievement whilst the moderating role in this relationship involved emotional creativity and cognitive creativity.

Emotional intelligence was evaluated based on four constructs including: well being, self control, emotionality, sociability and global trait. Emotional creativity was estimated on the basis of preparedness, novelty, effectiveness and authenticity whilst cognitive creativity was measured according to fluency, flexibility, originality and elaboration. Moreover, grade point average was applied to show academic achievement.

1.9 Limitations of Study

In this research like all other studies (Malthus, 2011), the limitations were recognizable particularly in three areas of measurement, samples and literature resources. The first limitation of this research is related to the way of evaluating the variables including emotional intelligence, cognitive creativity and emotional creativity. All of these variables are abstract concepts and using just a questionnaire to evaluate them may not demonstrate the exact and real quality and quantity of these features.

The sample size was another factor affecting the results of the study. When the studies are conducted with a big sample, the results are less biased and more trustable. The sample of this research is 472 Malaysian undergraduate students in Universiti Teknologi Malaysia. This sample size has been estimated based on the population of 12176 undergraduate students in this university and the results are generalizable to this population. However, choosing the sample from different universities could increase the possibility of generalizing the results to an expanded population.

Moreover, the sample was selected on the basis of cluster sampling among just undergraduate students of Universiti Teknologi Malaysia. This is a disadvantage in doing this research because the results relating to undergraduate participants can not be generalized to the students in other levels like the postgraduates. This limitation drives from their different knowledge, age and experience and the influence of these factors on capacities like emotional intelligence, emotional creativity and cognitive creativity. Therefore, in order to have more accurate results, the participants from different levels of education are suggested to be studied and compared.

The research done related to some variables of this study is very limited. For instance, emotional creativity is a new subject that has been presented in psychology area from 2009. It is an issue in the process of development, its real nature is not clear yet and just very few studies have been conducted in this area. Creativity is

another variable that has been neglected in studies while the limited conducted studies have mostly concentrated on cognitive model of creativity. Moreover, studies in the area of emotional intelligence have been conducted on particular variables such as job performance and well-being and most of them are based on Salovey and Mayer model.

1.10 Operational Definition

This part will focus on the operational definition of variables which were studied in this research. These variables include emotional intelligence as the predictor variable, cognitive and emotional creativity as the moderators and academic achievement as the predicted variable. The definitions are rooted in the theories that were selected to study the objectives of this study.

1.10.1 Emotional Intelligence

Definitions of EI vary according to different models of EI. Some experts define it as cognitive ability; some others focus on it as social skills while other groups describe it as a combination of cognitive, social and personality traits. All definitions can sum up EI as the ability that help us to understand emotions and mental capacities well. Furthermore, it has been described as the skill that can increase the success in different aspects of life such as family relationship, academic achievement and work performance (Mayer *et al.*, 2008). Petrides *et al.* (2007) defined EI as a combination of emotional status and “self perception” which derives from personality of individuals. This theory defines EI as the capacities of “well being”, “self-control”, “emotionality”, “sociability” and “global trait”:

Well-being refers to the total manner of well-being and people with high well-being are flourishing and feel content about their life while people with low well-being suffer from low self esteem and feel unsatisfied in their life.

Self – control element demonstrates the ability of a person to manage his needs and wills. People who take high scores in self-control option are capable of dealing with “external pressures” while people with low self-control show “impulsive” reactions and are not able to control their “stress”.

People who are highly emotional are able to apply expanded level of emotionality consisting of discerning, understanding and presenting emotions. All these abilities foster social relationship with relatives and fellows while the people who are less emotional have problem in distinguishing their emotions and express them to others. Usually, these people are not successful in their social relationship.

Sociability refers to the social interactions and effects. However, this is a concept that differs from emotionality because sociability contains wider social relationship than emotionality. It means that emotionality consists of the domain of family and friends while sociability includes all kinds of social interactions. Therefore, sociable people are good listeners with influential relationship while individuals with low sociability are not certain about social relationship and are not able to influence the others’ feelings (Shipley *et al*, 2010).

Global trait is the other dimension of trait emotional intelligence that is related to the total trait emotional intelligence.

In this study, emotional intelligence of participants refers to their well- being, emotionality, sociability and their ability in controlling themselves in different situations and global trait. These capacities were measured according to Trait Emotional Intelligence questionnaire short form (TEIQue- SF) (Appendix D).

1.10.2 Cognitive Creativity

Based on different approaches to creativity, this concept has been defined diversely. However, in all suggested definitions, the elements of novelty, originality, elaboration and developed outcomes or opinions have been pointed out. For

instance, Almedia *et al.* (2008) cite from Guilford that diversity is an important factor in creativity which includes four features of “fluidity”, “flexibility”, “originality” and “elaboration”. These are the traits that have been pointed out in Guilford and Torrance theory as the characteristics of cognitive creativity. Regarding the focus of this research on Torrance Theory, cognitive creativity was highlighted based on fluency, flexibility, originality and elaboration (Mayer *et al.*, 2008).

Originality refers to the novel opinions of a person who produces unknown, appropriate and suitable responses with the aim of combining them in the final stage. Fluency is the ability to generate the meaningful words as much as possible. In this part of creativity, two elements are important: the “verbal fluency” which emphasizes the number of statements and the “ideational fluency” which points out to the quickness in presenting the high number of ideas without paying attention to the quality of opinions. On the other hand, flexibility is the ability of creative person to move from a set of ideas or responses to another set. On the other hand, Guilford identifies two types of flexibility consisting of “spontaneous” and “adaptive”. Spontaneous flexibility is the capacity to generate a various group of ideas without any pause, but adaptive flexibility is the capacity to promote problem solving when the problem needs an unusual resolution. Elaboration refers to the ability to expand the initial resolution and idea by offering relating details.

The concentration of this research will be on Torrance theory and cognitive creativity as the moderator in the relation between EI and academic achievement. Therefore, cognitive creativity of participants refers to their capacity in choosing fluent, flexible, original and elaborate options. These features of participants were measured by self-report Abedi cognitive creativity test (Appendix B).

1.10.3 Emotional Creativity

Despite the different definitions for creativity which derive from different approaches, most of these definitions identify it as the cognitive ability to generate novel, useful and adaptive ideas (Sa´nchez-Ruiz *et al.*, 2011). However, Greene

(2001) declares that creative people seem to use a total map in their cognitive and social functions. Therefore, creativity is a personal issue that is presented in social relationship whilst different factors like cognitive abilities, emotions, motivations and personality affect expressing and experiencing it.

With regards to the relationship between emotions and creativity, emotions have been identified as the means for presenting creativity. Therefore, emotional creativity is the integrated capacity which consists of emotions and creativity. In other words, emotional creativity is the ability to match and present emotions in diverse circumstances (Blanco, 2010). Therefore, emotional creativity is the ability to experience and present new and suitable combination of emotions (Averill & Thomas-Knowles, 1991). There are three criteria for emotional creativity which are based on the characteristics of creativity consisting of novelty, effectiveness and authenticity. Based on the main features of creativity, an emotionally creative person should be prepared to implicate novel, effective and authentic emotions (Averill, 2004). In addition to these elements, empathy is an other factor indicating emotional creativity (Averill, 1999).

Novelty indicates combination of different kinds of emotion and creating new, unusual and personal emotions. Effectiveness emphasizes on the suitability of emotions and its usefulness for the person or a group and authenticity points out to the truthful and real representation of emotions. Preparedness indicates the capacity to realize, perceive and get information from one's and others' emotions.

Therefore, in this study, emotional creativity refers to the emotional preparedness of students in applying novel, effective and authentic emotions to adapt and show emotions in different situations of their life. Emotional creativity of participants will be measured by emotional creativity questionnaire of Averill (Appendix C) that has been made on the basis of his theory.

1.10.4 Academic Achievement

Academic achievement has been identified differently although a set of similar characteristics can be interpreted from these definitions. For instance, Abisamra (2000) citing Webster identifies achievement as the “quality” and “quantity” of students’ performance. In addition, Noreen *et al.* (2011) declare that academic achievement consists of two components: “skills” and “will” which are distinct but essential for completing achievement. They cite Bar- on that achievement is “academic intelligence” which derives from contractual identification, exam- based capacities and related skills. Naderi *et al.* (2009) point out to high achievement in examinations, “passing courses” and fulfilling educational periods as the crucial criteria for achievement especially for students of universities.

In this study, academic achievement is evaluated based on the GPA (Grade Point Average) scores. GPA is the average grade point got by students in the previous semester. Actually, a part of GPA is allocated to the issues such as final exam results, projects, and assignment while the other aspect of GPA is determined by generic or soft skills such as communication, team work and leadership. Multidimensionality of GPA roots on the emphasis of Ministry of Higher Education of Malaysia (MHEO, 2012) on developing the abilities that make student ready for employment. Therefore, developing both generic skills, knowledge and proficiency required for entering job centers have been focused in this policy. In this study, GPA that was determined by the results of course works and soft skills was defined according to self-reported scores by students that was based on the average from 0-4.

1.11 Theoretical Framework

The key objective of this study is to compare the role of cognitive and emotional creativity as moderators in the relationship between EI and academic achievement. According to Figure 1.1, this objective will be investigated based on three theories consisting of Trait Emotional Intelligence Theory, Torrance Theory of cognitive creativity and Averill Theory of emotional creativity. All these theoretical

approaches and related variables have been selected based on the reasons that will be pointed to in what follows.

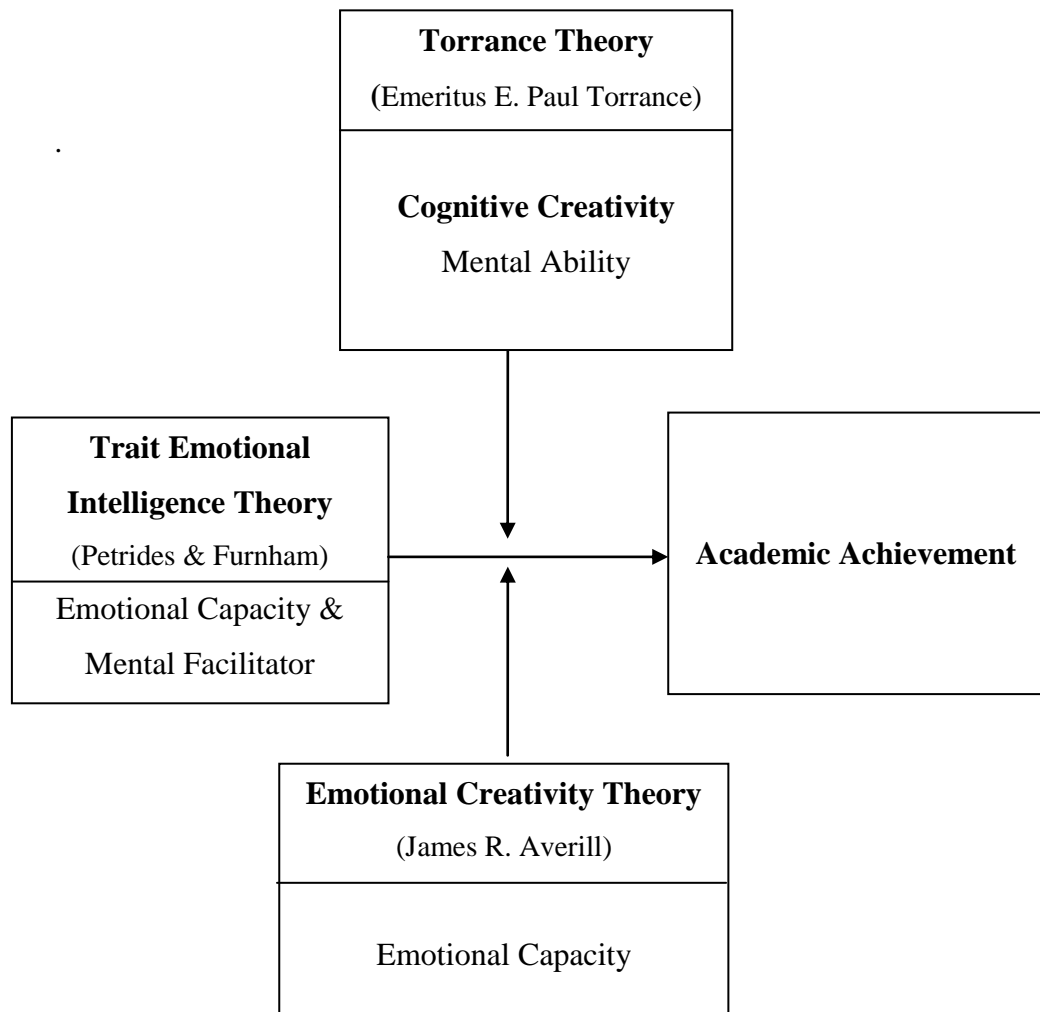


Figure 1.1 Theoretical framework

In order to study the relationship between EI and academic achievement, the focus was on trait emotional intelligence theory. This theory views EI as a personality trait that can be measured by self-report methods. With regards to the main objective of this study, namely, comparing cognitive creativity with emotional creativity in this relation, cognitive creativity was viewed through Torrance theory of creativity. This theory signifies CC as the mental capacity that is divergently applied to solve the problems through original, fluent, flexible and novel solutions. While Averill emotional creativity theory emphasizes applying creativity characteristics in the area of emotions for problem solving and achieving the goals. The views presented in these theories on the variables made the researcher to study the

objectives of this survey based on their ideas.

The theories were selected based on the main objective of this study. EI was viewed as the emotional capacity that can foster mental abilities to assist students to solve their problems and achieve their academic goals. On the other side, academic achievement was emphasized as the issue influenced by both emotional and mental factors. Therefore, the role of mental and emotional factors in this relation would be compared to know whether emotional or mental factor can moderate this relation or not. To do so, cognitive creativity focused on Torrance cognitive creativity theory that view, CC as a mental ability while emotional creativity was highlighted through Averill emotional theory that underlined applying creative abilities in the area of emotions. Thus two mental and emotional theories were studied as the moderators in the relationship between EI and AA. Besides, both CC and EC have been defined as the skills that can support students in the process of problem solving and academic achievement.

1.11.1 Trait Emotional Intelligence Theory

The main objective of this study is to signify the relationship between EI and academic achievement of undergraduate students of UTM. Although, the results of other studies have confirmed this subject, it is required that this relation in the new population be investigated. Therefore, emotional intelligence was studied as the predictor and academic achievement was focused on as predicted factor.

In the area of emotional intelligence, there are many theories that view emotional intelligence diversely. Four key models have been pointed out in defining EI. These models consist of Mayer and Salovey presented in 1995, Daniel Goleman and his colleague presented in 1999, Dulewicz and Higg in 1999 and Baron and Parker models” in 2000 (Qamash *et al*, 2011). In addition, a new approach or trait emotional intelligence theory has been presented by Petrides and Furnham in 2001 that views emotional intelligence from different approaches.

This model focuses on EI based on “self perception” and personality factors that can be measured through “self- report” evaluation in other mentioned models. Actually, trait emotional intelligence theory suggests new ways to “redefine” the previous models. The followers of this theory believe that all other models actually measure personality characteristics of people while they define EI as cognitive abilities, combination of mental and personality or socio-emotional capacity (Petrides, 2011).

This study viewed emotional intelligence through Trait Emotional Intelligence Theory (TEIT) because of the following reasons:

1. The suitable background of TEIT which is rooted in Eysenk and Five Personality Factors and their emphasis on individual differences.
2. The nature of TEIT which is based on the total personality traits as a more expanded theory than the other EI models.
3. The validity of the questionnaires of TRIT which introduces trait emotional intelligence as the real indicator of emotional intelligence construct.

According to this theory, traits are features and samples of behavior or postures for feeling and acting in a specific manner in a way that everybody differentiates from others (Stys & Brown, 2004). Thus, in this study, TRIT is appropriate theory that can be applied to investigate EI based on individual characteristics and personality traits because EI was highlighted as an individual trait that it supposed to be related to academic achievement as an individual issue.

On the other hand, academic achievement as an issue influenced by individual, mental, social and emotional characteristics was preferred to be studied in relation to a variable like trait emotional intelligence than other kinds of EI because trait emotional intelligence was viewed as the total personality trait that theoretically focuses on individual differences (Stys & Brown, 2004). In addition to relationship

between these two individual and multidimensional issues, other variables like creativity, and individual and multidimensional characteristics may affect this relation. Therefore, in this relation the role of two kinds of creativity as moderators would be studied.

Regarding the insight to trait emotional intelligence as a total personality trait and based on multi-dimensional nature of academic achievement, the role of two kinds of creativity consisting of emotional and cognitive creativity was compared. As to academic achievement and EI, the researcher intended to compare both mental and non-mental variables. To do so, emotional and cognitive creativity were compared in the relationship between EI and academic achievement.

1.11.2 Creativity Theories

Cognitive and emotional creativity were compared as moderators in the relationship between EI and academic achievement. Therefore, the final objective of this study was to determine whether the relationship between EI and academic achievement was significant in cognitive creative people or in emotional intelligent people. Thus, creativity was viewed through two cognitive and emotional approaches.

Although there is a common belief in definition of creativity as the new and acceptable opinion or production in a special activity or social relationship, there are two approaches to creativity. Some experts regard it as a phenomenon relating to personality while the other views creativity as “problem solving” or mental task (Lee *et al.* 2008). In other words, two approaches to creativity can be defined. Some experts identify creativity as the “personal characteristic” that can be recognized through creative performance like “flexibility”, “originality” and “fluency” of mental procedures. Moreover, this approach defines creativity as the freeness and generating individual presentation and self-orientation in recognizing the values of a “system”. Another approach focuses on creativity as a production on the basis of “originality”, “usefulness” and emotional aspects of creative production (Yagi,

2010).

This study focused on two types of creativity, consisting of cognitive and emotional creativity. The role of cognitive and emotional creativity would be compared as moderators in the relationship between EI and academic achievement. Thus, cognitive creativity would be highlighted through Torrance mental theory while emotional creativity would be focused based on Averill emotional creativity theory.

1.11.2.1 Torrance Cognitive Creativity Theory

Torrance defines creativity as the procedures of feeling problem and difficulties, deficits in knowledge, lost aspects, predicting stating hypotheses reviewing and reevaluating and estimating the results (Sanchesruiz *et al.*, 2011). On the other hand, Torrance identifies creativity as a mental capacity consisting of fluency, elaboration, originality and flexibility. However, his ideas are rooted on the theory of Guilford with a lot of common viewpoints. Guilford and Torrance declare that cognitive creativity is derived from divergent thinking and identify creativity as a measureable issue. Therefore, they tried to make instruments which demonstrate the “personality traits” that indicate creativity because Guilford considers creativity as the capacity and traits of people which let them deal with a creative activity or task (Simpson, 2012).

With regards to the emphasis of these theories on cognitive creativity as a personality trait and based on the views of Trait Emotional Intelligence Theory on EI as the total personality traits, this study probed the role of cognitive creativity as moderator in the link between EI and academic achievement. In other words, the researcher wanted to know whether cognitive creativity can moderate the relationship between EI and academic achievement in participants or not.

1.11.2.2 Averill Emotional Creativity Theory

With regards to the emotional nature of emotional intelligence and its effects on academic achievement, the researcher investigated the role of emotional creativity as the moderator in the relation between EI and academic achievement. Therefore, the next objective was to clarify whether emotional creativity could moderate the relationship between EI and academic achievement or not. In other words, the researcher wanted to know whether the relation between EI and academic achievement in participants who were emotionally creative was high or not.

Therefore, emotional creativity was viewed through Averill Emotional Creativity Theory. This theory points to the relationship between emotions and creativity and the role of emotions as a means for presenting creativity. In addition, this theory takes advantage of characteristics of creativity and identifies emotional creativity as the ability to implicate novel, effective and authentic emotions (Averill, 2004).

Finally, the key objective of the research was to determine which kind of creativity was moderator (cognitive or emotional creativity). In other words, emotional creativity and cognitive creativity were compared to define the significant moderator.

1.12 Conceptual Framework

The purpose of this study was to determine the role of creativity in the relationship between emotional intelligence and academic achievement. Therefore, two kinds of creativity including emotional creativity and cognitive creativity were compared in this relation. Similar to other studies, in this survey, each variable was consisted of some factors that will be pointed to in Figure 1.2. The theoretical background of these variables was dealt with based on the objectives of this study.

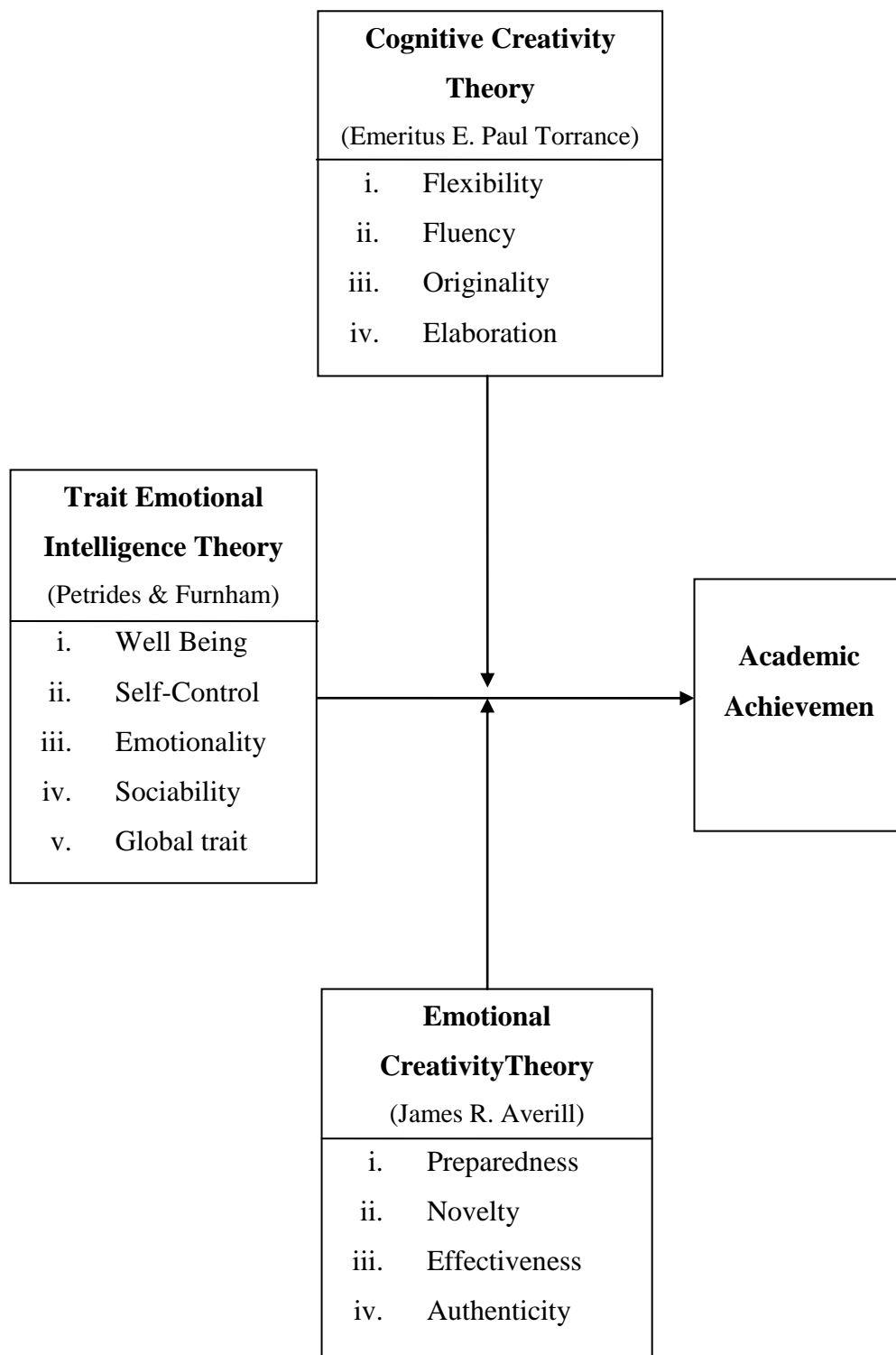


Figure 1.2 Conceptual framework

This research studied four key concepts including emotional intelligence, emotional creativity, cognitive creativity and academic achievement. Emotional intelligence as the predictor variable consisted of well-being, self-control, emotionality, sociability and global traits focused on the basis of Trait Emotional Intelligence Theory. Moreover, its relation with academic achievement as predicted variable was investigated and academic achievement was defined based on GPA in the range of 0- 4.

Cognitive creativity as the moderator was defined based on Averill Theory and preparedness, novelty, effectiveness and authenticity factors. The role of this variable was compared with cognitive creativity as the other moderator. Cognitive creativity was rooted in Torrance Theory and contained the elements of originality, flexibility, fluency and elaboration.

1.13 Summary

Conclusively, based on the background and significance of this study, the researcher highlighted the role of two kinds of creativity as moderators in the relation between EI and academic achievement. To do so, a sample was selected among undergraduate students of Universiti Teknologi of Malaysia. The objectives were concentrated on Emotional intelligence as predictor, emotional creativity and cognitive creativity as moderators. These variables were measured on the basis of related theories and by particular questionnaires. Academic achievement was the predicted factor that was defined based on GPA. The data were analyzed and estimated according to SPSS software version 18.

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