

## Correlation Between Executive Function And Gratitude Of International Acehne College Student In Malaysia

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### ABSTRAK

Studi telah dilaksanakan untuk memelihat hubungan antara fungsi eksekutif dengan rasa syukur. Penelitian ini dilakukan pada mahasiswa perguruan tinggi internasional Aceh. Subjek penelitian ini dipilih dengan menggunakan teknik stratified random sampling dengan pendekatan penelitian kuantitatif. Instrumen dalam penelitian ini menggunakan instrumen Executive Function Index (EFI) dan Gratitude Questionnaire (GQ-6) dengan menggunakan skala likert. SPSS (Statistical Package for Social Science) digunakan sebagai perangkat untuk administrasi dan mengatur data yang telah dikumpulkan. Data dianalisis dengan menggunakan statistik deskriptif yaitu persentase dan mean, serta menggunakan statistik inferensial yaitu pearson korelasi dan regresi.

### ABSTRACT

The research was conducted to look at correlation between executive function and gratitude of college students. The subjects used were the international Acehne student in Malaysia. The subjects were chosen by stratified random sampling techniques with quantitative research approaches. The instrument were The Executive Function Index (EFI) and Gratitude Questionnaire (GQ-6) based on Likert Scale. SPSS (Statistical Package for Social Science) was used to administer and manage the collected data. The data was analyzed using descriptive statistics (min and percentage) and inference statistics which were the

Pearson correlation, ANOVA and Regression. The hypothesis stating that there was statistically significant correlation between Executive Function and Gratitude was accepted as ( $r = .631$ ,  $p < .01$ ). based on the research, several implications and suggestions are given.

### PENDAHULUAN

College students make adjustments in their environment to make themselves confident, such as they learn about situations of the university, they interact with other people to help them and to know about information in it as well. Because of that situation, college students are people who will adjust to many stressful situations in their environments, such as living in a new environment, meeting new people, interaction with other people, and the financial concerns regarding the costs of college (Rey, 2009).

A college student who deals with stress needs the social support or the involvement of others in solving his or her problems. That is to say, individuals act cooperatively and seek support from others because of social resources to provide some real helps for both emotional and information supports (Lazarus, 1991). These students, after receiving support or assistance, then will usually give a "thank you" to those who have given support, or who have helped him or her. This is in accordance with the opinion that people who receive helps will show the prosocial behavior accepted by college student. Therefore people who experience a grateful mood or emotion are more likely to behave prosocially to the benefactor. Benefactor is a person who has given help and/or support from surrounding. It is naturally human behavior to feel grateful by saying "thank you", whenever we receive help and/or support from others (Chen et al, 2009).

Gratitude is considered as a moral barometer that is sensitive to benefit or help received from another moral agent, especially when people help others regarding cost or money to something that gives high value to those who helped them (McCullough et al, 2001). Gratitude is also foundational to both physical and mental health throughout the lifespan. Lifespan starts from childhood to the old age (Emmons & McCullough, 2003). The effect of gratitude is on the responsibilities, relationships and satisfaction in oneself (Hanafi, 2011). While much of the literature involving gratitude has indicated that a higher grateful disposition indicates higher well-being in school (Emmons & McCullough, 2003). Still in

the same research, it was found that gratitude has been shown to contribute not only in increasing positive effects and other desirable life outcomes but also negative effects for college students, such as depression and stressful situations.

The results of the research also show that gratitude not only helps the person receiving the greeting, but also for saying it. Speech is also able to improve and enhance good attitude capability in interaction with others while undergoing a social relationship. Facial expressions when describing "thank you" become a response for the people around you (Lambert, 2009). The ability of a person to respond to other people is the major social skill of a person (Elliot, 1990). For conclusions we can say that social skill is the cognitive ability that relates to the character strengths in a positive psychology.

Spinella and Miley (2003) found that a measure of impulsivity in college student related negatively to their course grades. Whereas, we know that, the gratitude also the experience and expression of gratitude is regarded as enhancing an individual's personal and relational well-being, and therefore beneficial for both individuals and society (Chan, 2010). The impulsivity is one aspect related to of executive function (Miley, 2006).

Talking about moral agent, there is an area in our brain implicated in our sense of morality. It is in our prefrontal lobe. The prefrontal systems mediating and leading to executive functions seem to be involved in social and emotional impulse control. This also affects how people express their emotion to environment and also make themselves to be a part of social life (Tekin & Cummings, 2002).

Executive functions are the set of cognitive abilities related to the character strengths of positive psychology. This focuses on understanding and building human strength (Spinella & Miley, 2006). Executive functions are also one of the most important part of cognitive abilities for adaptive functioning included for behavior that is more goal-oriented, flexible, and autonomous (Spinella, 2005). In other research found by Lezak (Coleman, 2012), there are some differences between cognitive skills and executive skills. Cognitive skills may be seen as domain specific, whereas executive skills act more globally and impact all aspects of behavior and that suitable and socially responsible conduct is dependent upon the integrity of these functions.

Some researchers have found positive relationships between feelings of gratitude and prosocial dispositions or prosocial behaviors (Naito et al. 2010). Rosenberg (1998), as quoted by Emmons and Mishra (2010) stated that, hierarchical levels of effective experience in human nature. Gratitude has been identified as a trait,

emotion, and mood. The current research on executive function, which aims to optimize the individual to show a mood, motivation, performance in their living life (Spinella, 2005). In addition, each child will internalize the attitudes and values that exist in the community during his or her growth. Societal concerns about the impact of the direction which oneself develops and the importance toward people, also influences all aspects of life (Froh, 2011). As mentioned previously, all of these situations make college students feel stress and they need other people to support and help them. When they get support or anything like that, college students may express their gratitude engaging the prefrontal lobe, i.e., executive function.

According to the explanation above, we can conclude, there is a relationship between executive function and gratitude of international Acehnese college student in Malaysia. This research also purpose to see the relationship and profile of gratitude and executive function.

## BASIC THEORY

### 1) Executive Functions

Executive Functions are a set of cognitive abilities in human, it is related to understanding and building of human strength. Another definition comes from Pladdy (2007) that identified executive functions as the ability of human derived from primarily frontal lobe cognitive processes, that are responsible for the ability to plan, set shift, display cognitive flexibility, show initiation, self generation, inhibit responses, serial order, and sequence of behaviour (Salcedo, 2011).

### 2) Gratitude

The word gratitude is derived from the Latin root *gratia*. It means grace, graciousness, or gratefulness. In other word, gratitude is also known as kindness, generousness, gift, the beauty of giving and receiving, or getting something for nothing (Pruyser, 1976). Tsang (2006) proposed that gratitude is a positive emotional reaction to the receipt of a benefit that is perceived to have resulted from the good intentions of another. In the other definition, gratitude is the result of recognizing another's goodwill and appreciating the other's generous action as an altruistic gift (Rey, 2009).

## RESEARCH METHOD

This research used quantitative approach and the sampling technique that is used in this research is non probability sampling method or purposive sampling. The h population of research is College Student with criteria is they are international Acehnese college students who are lived in Malaysia and has age ranged from 18-40 years old.

### Data Collection Method

This research aimed to determine the relationship between executive function and gratitude in international Acehnese college student using relevant psychological instrument. Psychological scale is a measuring instrument which has the characteristics of the affective attributes of questions or statements that do not directly reveal the attributes to be measured but revealed behavioral indicators of the attributes in question based on the overall response of the subject item that is projective, which is the projection of feelings or personality (Azwar, 1999). This research used two instruments, including the measures of Executive Function Index (EFI) and Gratitude Questionnaire-6 (GQ-6) and measure is based on an adapted Likert scale including describes me not at all, describes me slightly, describes me much, and describes very much.

#### 1. The Executive Function Index (EFI)

This measure was developed consisting of five subscales derived through factor analysis: empathy, strategic planning, organization, impulse control, and motivational drive (Spinella, 2005).

#### 2. Gratitude Questionnaire-6 (GQ-6)

Gratitude measures have been developed by McCullough, Emmons, and Tsang (2002) who constructed a self-report scale to measure individual differences in dispositional gratitude (the Gratitude Questionnaire-6, or GQ-6). The Gratitude Questionnaire-6 (GQ-6; McCullough, 2002), has six items that measure the four facets of the grateful disposition (i.e., intensity, frequency, span, and density).

### Data Analysis

Method used in this research is parametric statistical with regression analysis. Pearson correlation analysis is also used here. The purpose was to determine the relationship between dependent and independent variable, and whether the relationship is significant or not. Data analysis was done using SPSS (Statistical Package for Social Science) version 20.0 for Windows.

## RESULT

### Demographic Analysis

There is report on the frequency and percentage of the respondents data, such as gender, education level, university, age.

**Table 1. Demogra**

| Research Respondents                      | Frequency (f) | Percentage (%) |
|-------------------------------------------|---------------|----------------|
| Gender                                    |               |                |
| Male                                      | 46            | 52.8           |
| Female                                    | 41            | 47.2           |
| Education Level                           |               |                |
| Undergraduate                             | 31            | 35.6           |
| Master                                    | 49            | 56.4           |
| Doctoral                                  | 7             | 8.0            |
| Universities                              |               |                |
| Sultan Idris Education University         | 30            | 34.5           |
| Internasional Islamic University Malaysia | 28            | 32.2           |
| University of Malaya                      | 17            | 19.2           |
| National University of Malaysia           | 8             | 9.2            |
| Science Malaysia University               | 2             | 2.4            |
| Al-Bukhari University                     | 1             | 1.1            |
| North Malaysia University                 | 1             | 1.1            |
| Age                                       |               |                |
| 18-22                                     | 26            | 29.88          |

|              |           |              |
|--------------|-----------|--------------|
| 23-27        | 29        | 33.34        |
| 28-30        | 22        | 25.28        |
| > 30         | 10        | 11.5         |
| <b>Total</b> | <b>87</b> | <b>100 %</b> |

### Descriptive Analysis

This research also provide about descriptive analysis to give explanation about level of executive function and level of gratitude.

**Table 2. Categorization of Executive Functions of International Acehnese College Students in Malaysia**

| Range of Score   | Categorization | Frequency (f) | Percentage (%) |
|------------------|----------------|---------------|----------------|
| $52 \leq x$      | High           | 11            | 12.6 %         |
| $37 \leq x < 52$ | Moderate       | 74            | 85.1 %         |
| $x < 37$         | Low            | 2             | 2.3 %          |
| Total            |                | 87            | 100 %          |

Based on the table of categorization of executive functions in international Acehnese college students in Malaysia out of the 87 students there are 11 (12.6%) students who scored a high level of executive functions, 74 (85.1%) at moderate levels of executive function, and 2 (2.3%) at low level of executive function. The overall mean score of executive function was 46.21 that is at moderate level.

**Table 3. Categorization of Gratitude of International Acehnese College Student in Malaysia**

| Range of Score   | Categorization | Frequency (f) | Percentage (%) |
|------------------|----------------|---------------|----------------|
| $18 \leq x$      | High           | 51            | 58.6           |
| $12 \leq x < 18$ | Moderate       | 36            | 41.4           |
| $x < 12$         | Low            | -             | -              |
| Total            |                | 87            | 100 %          |

Based on the categorization table of gratitude in the international Acehnese college students in Malaysia, from 87 students there are 51 (58.6%) students who scored a high level of gratitude, 36 (41.4%) students at moderate level of gratitude, and none at low level.

### Inferential Analysis

Inferential analysis aimed to draw conclusions by testing hypotheses relating to the rejection or acceptance of the hypothesis and also to determine the relationship between executive function and gratitude, the initial step of normality test and linearity tests were done.

Through the normality test, the researcher can determine the subsequent data analysis techniques. Thus, by having the decision criteria of normality test is if the  $\text{sig.} < .05$  ( $p > .05$ ) then  $H_0$  is rejected, whereas if the  $\text{sig.} > .05$  ( $p > .05$ ) then  $H_0$  is accepted. The result of normality test in executive function variable is (K-S Z = 0.319) score and gratitude variable is (K-S Z = 0.112).

The second step is linearity test. In this tests, the research used parametric statistic because the distribution is normal. Analysis technic is used anova to the linearity of executive function variables obtained with gratitude in international acehnese college students in Malaysia. The result is two variables are in significant value on Linearity is **.000** because of the significance less than .05. So we can conclude that the linearity test based on the two variables is linear with ( $0.000 < 0.05$ ) and also has correlations table is significant a positive relationship between executive function and gratitude ( $r = .631$ ,  $p < 0.01$ ). The coefficient of determination obtained was a 39.89 for variance of the relationship between executive functioning and gratitude.

### Sub-Constructs Analysis

Sub-constructs analysis aims to invent which aspect have strong relationship with each research variable.

**Table 4. Correlation of sub-constructs of Executive Function with Gratitude of International Acehnese College Students**

| Sub-Constructs of Executive Function | Koefisien Correlation (r) | Koefisien Determination ( $r^2$ ) |
|--------------------------------------|---------------------------|-----------------------------------|
| Emphaty                              | 0,420                     | 0,177 (17,7%)                     |

|                    |       |       |        |
|--------------------|-------|-------|--------|
| Strategic Planning | 0,289 | 0,084 | (8,4%) |
| Organization       | 0,185 | 0,034 | (3,4%) |
| Motivational Drive | 0,290 | 0,084 | (8,4%) |

From **Table 4.** it can be seen that empathy accounted for the most variance on the relationship between executive function and gratitude amongst other factors.

## DISCUSSION

The results of statistical analysis showed that there was a significant correlation between executive function with gratitude of international Acehnese college students in Malaysia. These results support the hypothesis proposed by the researcher, that there is a correlation between executive function with gratitude of international Acehnese college student in Malaysia. This relationship is accounted for by a variance of .398 (39.8%). This means executive function is not the one that has an influence on international gratitude Acehnese college student but there are 60.2% of the other factors that influence on gratitude, but not examined in this research. Examining, the subconstructs empathy accounted for the greatest variance of .42 relationship with gratitude.

At is executive function, empathy is a part of an important social emotion and cognition that influence interpersonal judgment, emotion and behavior of people (Paul L et. al., 2011). One of the social emotions associated with interpersonal relationships is gratitude, in the appropriate circumstances when the college students experience emotional exchange with others, they may also be more likely to feel gratitude to others. Gratitude has also been conceived as one of the empathic emotions, dependent on the capacity to empathise with others (Lazarus & Lazarus, 1994 ; Nelson, 2009).

Executive function and gratitude share a moderately high correlation. The higher the executive function of college students, the higher level of gratitude or viceversa. This is consistent to Spinella and Miley (2006), finding that there is a significant and positive correlation between the executive function and gratitude, as one of the positive psychological attributes.

In addition, there are also other subconstructs of executive function that are related to gratitude including motivational drive and strategic planning (Spinella & Miley, 2006). Motivational drive is the driving of a college student behavior. If the college students have gratitude to others, they are likely to have the motivation to do that. Because there are reasons that justify their behavior, including gratitude itself, it is called realistic of behavior. In executive function, motivation comes from the motivational drive related to the prefrontal lobe.

Strategic planning is part of executive function as well, it is a way for someone to recognize and coordinate step by step of their need necessary for achieving goal (Lezak, Fischer et. al., 2004). Through these explanations, we can assume that before expressing gratitude to others, the college students must think before doing. It is about what should be said, for whom, for what and anything else.

Furthermore, there is another factor which also influences on gratitude, it is life achievement. The gratitude relates with the best result of someone's life. Obviously, the best result is not easily and automatically achieved by the people (Emmons & Mishra, 2010). It indicates that the college student also has a desire like everyone else, the desire for pleasant things and giving satisfactory results. One of the examples is the grade score at college. A college student has an expectation to get good grades in their education, but sometimes it is difficult to get, because of ability of intellectual, different skills and also opportunity. Hence, the gratitude should be looked at the result and their own achievement toward their life.

According to Emmons and Mishra (2010), individual personality flaws such as neuroticism or narcissism inhibits the positive contribution of the people, such as gratitude. It indicates that gratitude also has correlation with individual personality. A college student whose neuroticism or narcissism personality is going to be difficult to say "thanks" in their daily life. This problem might appear as the individual is used to concerning of his or her own and having benefit orientation for himself/herself.

Gratitude also has a strong correlation with spirituality, it is about how much people believe of their God and feel grateful to God. Gratitude relates to other positive affective traits of people as well, such as extraversion, optimism, and vitality (McCullough et. al., 2004). The research conducted by Sandage, Hill and Vaubel (2011), also found that gratitude is related to spirituality besides generativity and mental health.

## CONCLUSIONS

This research aims to obtain empirical data which could explain the relationship between executive function and gratitude. There is a positive correlation between executive function and gratitude in international Acehnese college students in Malaysia. Executive function is not the only one who

contributed to the gratitude that exist on college student, but there are other factors that also influence the gratitude experienced by college student who does not include in this research.

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