

The Role of Personality Traits in Predicting Senior High School Students' Academic Buoyancy

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Abstract

All students have to face academic pressures, setbacks and challenges that are part of their everyday academic life. The capacity to deal with this, i.e. 'academic buoyancy', is needed to reduce the impact of academic adversity. Since academic buoyancy may be associated with personality, our study explored the role of personality trait, especially the 'big five', as predictors of the academic buoyancy in senior high school students in an Eastern culture. Methods: Using quota sampling, 356 respondents were sampled from the eight largest senior high schools in Bandung, Indonesia. Five personality factors were measured using the Big Five Inventory. Furthermore, academic buoyancy was assessed utilizing the Academic Buoyancy Scale. Multiple regression analysis was used to analyze the predictive value of each trait for academic buoyancy. Result: Academic buoyancy appears to be related to personality differences. We found three personality traits which predicted positively and significantly academic buoyancy, namely Conscientiousness, Agreeableness and Extraversion. Conclusions: The study has provided a new understanding of the relevance of personality for academic student's life. Implications and differences in relation between personality and academic buoyancy in senior high school' student are discussed.

Keywords: Academic buoyancy; Five personality factors; Secondary high school.



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1. Introduction

Higher education institutions often depicts their curricula as a challenging, rigorous, or meeting high standards (Clair and Hackett, 2012). All students face academic pressures, setbacks, challenges that are part of everyday academic life (Martin *et al.*, 2010), but vary greatly in how they manage them. An important concept here is 'called academic buoyancy': "the students' ability to successfully deal with academic setbacks and challenges that are typical of the ordinary course of school life (e.g., poor grades, completing deadlines, exam pressure, difficult school work)" Martin and Marsh (2008a). In other words, academic buoyancy is a capability of students to cope effectively and "keep afloat" when faced with common academic setbacks encountered on a regular basis (Datu and Yuen, 2018; Martin and Marsh, 2008b). Students' efforts to overcome daily academic problems was positively related to their ability to the use of a problem solving coping strategy (Martin and Marsh, 2008a). Which can increase effective responses to everyday setback and challenge (Parker and Martin, 2009).

There is an international consensus that characteristics of personality form a non-cognitive factor that responsible for high academic performance (De Raad and Schouwenburg, 1996). A meta-analysis by De Raad and Schouwenburg, foundt that personality explains an important part of academic success in secondary school (De Raad and Schouwenburg, 1996). The Big Five Model (Five Factor Model) might been considered as the best model for describing personality compared to other models (Block, 1995; Digman, 1990; McCrae and Costa, 1997). The main dimensions of the Big Five Models are Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Neuroticism includes traits like anxiety, insecurity, self-doubt, short temper and instability. Extraversion encompasses traits such as sociability, talkativeness, congeniality, liveliness, gregariousness and self-confidence. Openness to experience is characterized by creativeness, imaginativeness, curiosity, having a board area of interest, willingness to take up challenges and being intellectual. Conscientiousness is described by qualities such as dutifulness, scrupulousness, orderliness, resourcefulness, single mindedness, accountableness, industriousness, and the willingness to achieve goals. Agreeableness finally, is characterized by helpfulness, courteousness, being successful in interpersonal relationships and openness to cooperation (McCrae and Costa, 1997). It was reported that these five dimensions have been founded throughout in various cultures across the world (Tett and Christiansen, 2007).

Several studies that have been conducted showing that personality can predict academic resilience (Campbell-Sills *et al.*, 2006; Fayombo, 2014; Kocayörük *et al.*, 2015). Current research also shows that personality has a contribution in explaining student's academic motivation and achievement (Komarraju *et al.*, 2009). Personality aspects has a contribution to explain coping style in academic context. The traits of extraversion and conscientiousness are more concern to predict adaptive coping, while neuroticism predicts most kinds of maladaptive coping (Carver and Connor-Smith, 2010a). Personality aspects are also thought to predict academic buoyancy (Martin, 2014). It can be hypothesized that in particular Conscientiousness and Neuroticism can significantly explain the variation of academic buoyancy (Martin, 2014). To our knowledge, so far there has not empirically research conducted which shows if and how the 'big five' predict students' academic buoyancy. This research address this gap for senior high school students in Indonesia.

Our hypotheses of the present study

1. Conscientiousness, Agreeableness, Extraversion, Openness predict academic buoyancy among senior high school students in Indonesia positively.
2. Neuroticism predicts academic buoyancy among senior high school students in Indonesia negatively.

2. Methods

2.1. Design and Sample

This cross-sectional study utilized quota sampling, where respondents were chosen from the eight largest senior high schools in Bandung, one of the cities with the highest number of adolescents in Indonesia. In this study, this present study we included 400 students as sample, In this study, the researcher has determined a margin of error at 5% and number of confidence level at 95% commonly used in similar studies. The minimumally required sample size is 291 for a large effect size (Muller, 1989).

2.2. Procedure

First, a permission letter from the university was presented to the board of the schools in order to obtain a permission to perform the study. After the permission was granted, the researcher gave each potential participant an informed consent letter containing information about the aim of the research, confidentiality, benefit and risk of participated in this study. If a student was willing to participate in the study, they had to sign an inform consent form. After that, he/she received the questionnaire and filled out the questionnaire in their class room.

2.3. Measures

Big Five Inventory (BFI) To measure Five personality factors - Extraversion, Openness to Experience, Neuroticism, Conscientiousness, and Agreeableness - researcher used the Big Five Inventory (BFI) (John and Srivastava, 1999). This questionnaire consisted of 45 items divided into five dimensions with nine items per dimensions. Participants rated the extent to which 45 trait adjectives that were most accurate descriptors of them self (e.g., talkative, tending to find fault others fault, work on tasks according to the plan that has been made, easy moody / sad). The respondent rates them self on a 1 ('strongly disagree') to 6 ('strongly agree') scale. The original English questionnaire was translated into Bahasa Indonesia by the first author (MR) and was checked by an expert in English literature. The internal consistency, measured by the Cronbach's Alpha, for this sample is 0.65 for Neuroticism and Agreeableness, which can be categorized as acceptable (DeVellis, 1991); 0.76 for Extraversion; 0.80 for Openness and 0.79 for Conscientiousness which can be categorized as satisfactory to high reliability (DeVellis, 1991).

2.4. Academic Buoyancy Scale (ABS)

Academic buoyancy was assessed using the Academic Buoyancy Scale ABS (Martin and Marsh, 2008a;2008b), consisting of 4 items; e.g., ("I don't let study stress get on top on me"), items were rated on a 1 ('strongly disagree') to 7 ('strongly agree') scale. The original English questionnaire was translated into Bahasa Indonesia by the first author (MR) and was checked by an expert in English literature. The Cronbach alfa reliability of this test is 0.80 which can be categorized as respectable (DeVellis, 1991).

2.5. Data Analysis

Descriptive statistics were used to describe participant sociodemographic characteristics: i.e. percentages for gender, school and prior achievement, and mean and standard deviation for age (Dancey and Reidy, 2011).

The researcher conducted multiple regression analysis techniques to analyze the predictive power of independent variables in this study (the five factors of personality) on the dependent variable (academic buoyancy). Several data assumptions: i.e. normality, multicollinearity, and heteroscedasticity were tested beforehand. These tests show that the data are normally distributed and free from problems of multicollinearity and heteroscedasticity.

3. Result

From the 400 respondents who agreed to participate, 44 provided incomplete data; therefore their data were excluded. In total, 356 respondents were included in the final analysis. The average age of respondents was 16.1 years (SD=0.59, range 15-18 years), see for the demographic data and the descriptive statistics of the personality factors and academic buoyancy table 1.

Table-1. Demographic Characteristics of the respondent and Mean and Standard Deviation of Five factor personality and Academic Buoyancy

	Total (Percentage)	M	SD
Gender		-	-
Male	154 (43.30%)		
Female	202 (56.70%)		
Class		-	-
10	98 (27.60%)		
11	134 (37.60%)		
12	124 (34.80%)		
Academic buoyancy	-	18.80	2.28
Openness	-	42.76	6.02
Extraversion	-	42.87	4.36
Conscientiousness	-	41.91	5.83
Agreeableness	-	38.62	3.97
Neuroticism	-	27.61	6.60

Referring to the [table 1](#), it can be described among 5 personality factor, where Extraversion has the highest Mean score and Neuroticism has the lowest Mean score.

Table-2. Regression analyses on Personality Factor with academic buoyancy

Personality Dimension	Unstandardized Coefficients	Standardized Coefficients Beta	t-test	Significance	R Square	Adjusted R Square
Conscientiousness	0.17	0.31	4.34	0.00**	0.34	0.31
Agreeableness	0.15	0.28	3.97	0.00**		
Extraversion	0.09	0.27	3.81	0.00**		
Neuroticism	-0.01	-0.03	-0.48	0.64		
Openness	0.01	0.04	0.53	0.59		

**p<.01

As can be seen in [Table 2](#), the association between the criterion and explanatory variables is moderately strong (R Square = .34). Together Extraversion, Neuroticism, Conscientiousness, Openness, Agreeableness accounts for 31.30 % of the academic buoyancy (adjusted R²). Conscientiousness, Agreeableness and Extraversion are positively and significantly related to academic buoyancy (each p <<.001). Openness and Neuroticism did not show a significant relationship with academic buoyancy.

4. Discussion

This study aims to determine whether the five factor model of personality can predict academic buoyancy among senior high school in Indonesia. We found that among five factor of personality, three of them could predict the academic buoyancy positively, namely Conscientiousness, Agreeableness and Extraversion.

Our finding regarding conscientiousness provides empirical support for the view of [Martin \(2014\)](#). Planning and discipline can facilitate problem solving coping ([Carver and Connor-Smith, 2010b](#)). The use of problem focused coping can make students able to buoyance or overcome academic problems effectively ([Martin and Marsh, 2008a](#)).

Regarding the traits Agreeableness and Extraversion: students who score high on agreeableness tend to be submissive, are willing to participate in activities determined by the school and also have strong social networks ([Penley and Tomaka, 2002](#); [Roberts et al., 2007](#)). By doing so, they receive the social support that they need to overcome the daily hassles faced in school ([McCrae and Costa, 1997](#)). Willingness to be accepted and fulfill academic demands encourage students with dominant agreeableness to use the problem of coping focus. It also has been proven by previous research, that Agreeableness has positive correlation problem-focused coping strategies ([Carver and Connor-Smith, 2010b](#); [Matthews et al., 2015](#)). Extraversion is characterized as possessing positive emotions, assertiveness and high energy ([Costa and McCrae, 1992](#)), which can provide the energy necessary to begin and sustain in solving a problem ([Carver and Connor-Smith, 2010b](#); [Matthews et al., 2015](#)).

In contradiction to what is expected, the present finding showed that neuroticism did not significantly predict academic buoyancy. Future research is warranted to include other variable, e.g. culture system ([Dahal et al., 2018](#)), that might be serve as moderator or mediator between neuroticism and academic buoyancy, this finding requires future research.

Openness did not significantly predict academic buoyancy either. While previous research showed that the characteristics of the dimension of openness may lead to greater use of problem solving ([Penley and Tomaka, 2002](#)), in other studies found that this dimension may also be related to wishful thinking, which involves imagination and fantasy to face the problem ([John et al., 1999](#)). Those who are open to experience stand against rigid rules, do not tend to obey rules without questioning them; have a critical mind, and are not conservative in orientation ([Costa and McCrae, 1992](#)). It can, therefore cause problematic for a person when facing any demans and issues in school. This might be especially a problem in a conformistic society as Indonesia, where open criticism is not acceptable. Openness is perhaps the most difficult dimension to identify, and the scholarly debates regarding this dimension are still ongoing ([Costa et al., 1996](#)).

This study has some limitations. Firstly, the sampling technique being used is quota sampling in a big city in Indonesia, that could raise the question of representativeness of this study for secondary school students in general. Future studies should also take into account differ in features such as culture, location, and type or size of school. Secondly, by the very nature of the cross-sectional study design, it is not possible to infer a causal relationship. Therefore, longitudinal studies are encouraged for future research. Thirdly, since the data of this study is based on the personal statements provides by individuals, one should not sight of the fact that there can always be a certain degree of margin of error in them. Having said this, the current study can be seen as a first step of documenting the relative strong relationship between personality and academic buoyancy.

Taken as whole, multiple regression result suggests that difference in academic buoyancy that are often readily apparent in the classroom may be related to basic personality differences. One clear implication of this finding is that educator need to be aware that students are not homogenous in their level of academic buoyancy. Teacher should be aware to support in particular students who are low on extraversion, agreeableness and conscientiousness in difficult times. Therefore, it makes sense to match delivery modes and activities to likely preference of student. However, this could be difficult, especially in large classes. One option for teacher is to employ a variety of techniques and activities to increase the chance that they could reach all students at the same time.

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