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PERSONALITY TRAITS AS PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG UNDERGRADUATE EDUCATION STUDENTS IN PUBLIC UNIVERSITIES ADAMAWA STATE, NIGERIA

BY

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Abstract

This research investigated personality traits as predictors of academic achievement among undergraduate education students in public universities in Adamawa State. The main purpose of the study was to determine the level to which personality traits (openness, conscientiousness, extraversion, agreeableness & neuroticism) predict the academic achievement of undergraduate students. One research question and one hypothesis were raised to guide the study. The target population of the study was 2,287 undergraduate students in public universities in Adamawa State, Yola Nigeria. A sample of 330 participants was selected for the study through multi-stage sampling, two instruments were used. The Big Five Inventory model and theory by McCrae & Costa (1992) was adopted, and a Cronbach Alpha reliability coefficient of 0.875 was obtained for internal consistency. Pro forma was used to collect students' CGPA, Mean and Standard Deviation were used to answer the research question while multiple regression was used to answer the null hypotheses at 0.05 level of significance. The results revealed that the big five personality traits (Openness to Experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism) predict undergraduate student's academic achievement with a significant regression equation (F_5, 315) = 173.666, p = 0.000 p < 0.05

with an R^2 of 73.6 %. The study concluded that the Big Five personality traits (Openness to Experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism) are good predictors of academic achievement of undergraduate students.

KEYWORDS: Personality, Traits, Academic Achievement, Undergraduate Student

Introduction

The coloration between personality traits and academic achievement among researchers and educational psychologists has come a long way which has led to an increasing quest and interest in knowing more about how the big five personality traits predict the academic achievement of students and the role they play regarding students' performance and academic achievement of students, as a particular point of interest the role that these psychological construct, traits play in predicting academic achievement of university undergraduate students. These traits, popularly referred to or known as the 'Big Five' include the following psychological construct that was extensively explored in this research work, and these traits include Openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. This model and theory of the Big Five by Costa and McCrae, (1992) cited in Owonwami, Jude, Sakiyo (2021) are being used basically to describe the Big Five personality traits in terms of how they predicted and interact with the academic achievement of undergraduate university students as it serves as the independent variable of these studies. Openness to experience is the first trait of the Big Five personality traits that describe someone or person that is imaginative someone that can cognitively create an idea and visualize it. The second trait of the Big Five is Conscientiousness, Conscientiousness describes a person who is highly conscious of his or her environment or disciplined and focused on whatever she sets out to do. The third personality trait is Extraversion and persons with this personality trait tend to be open-minded and have the ability to connect with people easily and their immediate environment.

The fourth trait or construct in the Big Five personality trait is Agreeableness, Agreeableness relates to people who are easygoing and who easily trust people they know and those they just meet they can also be great companions because they trust and can put other people's needs before their own needs. The last trait in the Big Five personality trait is Neuroticism, Neuroticism refers to people who are known not to trust people they keep to themselves, don't trust easily, and have fear of their immediate environment. They can be quiet and find it hard to mingle generally they are not sociable.

This study also looks at the Academic achievement of university undergraduate students as the dependent variable of this study as it relates to the present study. Academic achievement refers to the state of progress of the total of the academic work of a student cumulatively collected also known as CGPA usually at the end of a

semester or an academic session, it can also be said to be the average total of a student's general performance.

Personality traits statistically significant predict student's academic achievements among Modibbo Adama University of Technology Yola, Adamawa State, Nigeria (Owonwami, Jude & Sakiyo, 2021). The authors explain that, students who are agreeableness, conscientious, extroversion, and openness and except neuroticism which is negative related to academic achievement. Therefore, the present study tries to understand if personality traits can predict the Academic achievement of university students when combined other universities and at what level these traits have a predicting factor.

Statement of the Problem

Given the distinctiveness of individual personality traits, it is evident that a student's academic performance is somewhat influenced by their personality traits when striving for high academic achievement in educational institutions. The Big Five personality traits, encompassing openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism, have been linked to a broad spectrum of behaviors, as numerous research endeavors have sought to examine the role of these traits as predictors of academic success among undergraduate students in public universities within Adamawa State, Nigeria. These prior research works have aimed to explore the connection or correlation between these traits and academic learning and performance.

However, there remains a noticeable gap in the existing literature, as these researchers have not directly delved into the extent to which the Big Five personality traits, namely openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism, contribute to variations in predicting the academic achievements of undergraduate university students. This study seeks to address this gap by investigating the specific impact of these personality traits on the academic achievements of undergraduate university students. The motivation behind this study is to unravel why, despite exposure to the same educational materials and learning environments, some undergraduate students consistently outperform their peers. Can these personality traits be considered reliable predictors of students' academic success?

Therefore, the primary objective of the current research is to focus on the potential of personality traits as robust predictors of academic achievement among undergraduate education students in public universities within Adamawa State, Nigeria.

Research Question

The research question was answered in this study:

1. What is the level of personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) among undergraduate students in public universities in Adamawa state?

Hypothesis

The null hypothesis was formulated and tested at a 0.05 level of significance in this study:

HO_1: Personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) do not significantly predict the academic achievement among undergraduate education students in public universities in Adamawa State

Methodology

This study employed the use of correlational research design, The researchers decided to employ this design as it is appropriate for this study since it intends to collect data from undergraduate students in public universities in Adamawa state through the use of test instruments as mentioned in these research work, Nigeria, to critically look at each variable of the personality traits (extraversion, conscientiousness, agreeableness, neuroticism, and openness to experience known as the Big Five,) to see if these traits could predict the academic achievement of university undergraduate education students.

The total population for this study was 2,287 Undergraduate University Education Students in public Universities in Adamawa State which was comprised of 1,559 undergraduate education students in the Modibbo Adama University Yola and 728 undergraduate education students in Adamawa State University Mubi. The population of the study was field surveyed by the researcher in all departments in the faculty of education in public universities in Adamawa state, Nigeria. The sample size for the study was obtained by using guidelines proposed by Cohen, Manion, and Morrison (2011), which indicated that a 10% sample size is representative of a study population that ranges between 1000 – 9999 participants. Therefore, 330 undergraduate education students were sampled for this study. A multi-stage sampling technique was adopted for this study.A stratified random sampling technique was used to sample the different programs, while a simple random sampling technique was used to sample participants for this study by the balloting method. The researchers decided to adopt this sampling technique to enable all participants in the population to have an equal chance of being selected. Two instruments were used for data collection, the instruments are the Big Five Inventory (BFI) and Pro-forma. The researchers adapted the Big Five Inventory (BFI) by McCrae and Costa (1992), for data collection for this research work. The Big Five Inventory (BFI) is a psychological test instrument that measures the personality traits of individuals. The Big Five inventory is a 40-item that assesses five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism).

The respondent provided a rating for each of the items of a 5 -5-point modified Likert scale ranging from Very high level (VHL) = 5, High level (HL) = 4, Moderate level (ML) = 3, Very low level (VLL) = 2 and Low level (LL) = 1. The Big Five

personality inventory was subjected to validation by four experts in the field of educational psychology from the Department of Environmental and Life Science Education, Modibbo Adama University Yola to ensure that the appropriateness of the test items and also ensure that the test items sampled covered the content area of the study.

A pilot study was conducted using a Cronbach alpha method to determine the internal consistency of the Big Five Inventory. It was found to be 0.80. Both descriptive and inferential statistics were adopted for the study, and multiple regression was used to determine the hypothesis. The hypothesis was tested at a 0.05 Level of Significance. The decision rule to answer the research question was based on descriptive statistics of Mean scores and Standard Deviation as, very high level (VHL) with a mean of 4.5 – 5.00, High level (HL) with a mean of 3.50 – 4.49, Moderate level (ML) with a mean of 2.50 -3.49, Low level (LL) with mean of 1.50 – 2.49, Very low level (VLL) with a mean of 0.50 – 1.49. While the decision rule for testing the hypothesis was if a significance level of 0.05 is not achieved i.e., if the $p < 0.05$ from the regression, the null hypotheses will be rejected and also will not reject the null hypotheses if $p > 0.05$.

Results

Research Question: What is the level of Personality Traits (openness, conscientiousness, extraversion, agreeableness, neuroticism) among Undergraduate Students in Public Universities in Adamawa State.?

Table 1: Mean and Standard Deviation of Personality Traits (openness, conscientiousness, extraversion, agreeableness, neuroticism) among Undergraduate Students in Public Universities in Adamawa State

S/N	Item	n =317	Mean	S.D	Remark
Big Five Personality Traits:					
1.	Openness		3.84	1.18	HL
2.	Conscientiousness		3.65	1.22	HL
3.	Extraversion		3.68	1.18	HL
4.	Agreeableness		3.47	1.26	ML
5.	Neuroticism		3.58	1.20	HL
Grand Mean			**3.64**	**1.21**	**HL**

Key: n=Valid number of participants, HL=High Level, ML=Moderate Level

Table 1. Shows the total mean and standard deviation of responses of students based on the items of the big five personality traits (openness, conscientiousness, extraversion, agreeableness, neuroticism). The participant's response depicted a high level of the big five personality traits among undergraduate university students with a grand mean of 3.64**.**

Hypothesis

Personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) do not significantly predict the academic achievement among undergraduate education students in public universities in Adamawa State

Table 2a: Model Summary of a Multiple Regression Analysis between personality traits (openness, conscientiousness, extroversion, agreeableness and neuroticism) and the Academic Achievement of University Undergraduate Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.858[a]	0.736	0.732	0.523

The result in table 2a shows a model summary which indicates how personality traits (Openness, conscientiousness, extraversion, agreeableness and neuroticism) explains the variance in students' academic achievement, this result shows that the variance students' academic achievement was accounted for by 73.6% by the big five personality traits. This implies that personality traits (openness, conscientiousness, extroversion, agreeableness and neuroticism) strongly predicts students' academic achievement

TABLE 2b: ANOVA of Multiple Regression Analysis of Personality Traits (openness, conscientiousness, extroversion, agreeableness, and neuroticism) and the Academic Achievement of University Undergraduate Students

Model		Sum of Squares	Df.	Mean Square	F	Sig.
1	Regression	237.912	5	47.582	173.666	.000[b]
	Residual	85.210	315	.274		
	Total	323.122	316			

a. Significant; $p < 0.05$

Table 2b. Shows ANOVA of standard multiple regression analysis conducted to test if the Big Five personality traits (openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism) significantly predict students' academic achievement, significant regression equations were found R^2 73% (F_5, 315) = 173.666, p = 0.000. The null hypothesis of no significant prediction was rejected since the $p < 0.05$ level of significance. This implies that personality traits (openness, conscientiousness, extroversion, agreeableness, and neuroticism) significantly predict students' academic achievement among undergraduate education students in public universities in Adamawa State

Table 2c. Summary of Coefficients of Regression between Personality Traits and the Academic Achievement of University Undergraduate Students

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.725	.287		-6.011	.000
Openness	-.080	.028	-.425	-2.886	.004
Conscientiousness	.075	.034	.361	2.226	.027
Extraversion	-.055	.039	-.273	-1.425	.155
Agreeableness	.009	.007	.037	1.249	.213
Neuroticism	.231	.021	1.181	11.136	.000

a. Significant; $p < 0.05$

A standard multiple regression procedure was used to predict academic achievement based on different personality traits. Academic achievement was regressed on the following personality traits: openness to experience, consciousness, extraversion, agreeableness, and neuroticism. These predictors all together accounted for 73.6% total variance in the academic achievement of Undergraduate University students, which was significant, R^2 .736 [73%] ($F_{5}, 315) = 173.666, p = 0.000, p < .005$. The standardized β coefficients were used to test the significance of each predictor variable of the personality traits as openness, consciousness, extraversion, agreeableness, and neuroticism with the following beta at ($\beta = -.425, p < 0.05$) for openness, ($\beta = -.273, p > 0.05$) for extraversion, ($\beta = .361, p < 0.05$) for conscientiousness, ($\beta = .037, p > 0.05$) for agreeableness and ($\beta = 1.181, p < 0.05$) for neuroticism respectively. These results show that openness, conscientiousness, and neuroticism demonstrated a significant prediction of academic achievement of University Undergraduate students from the standard multiple regression. While openness, extraversion and agreeableness demonstrated a negative prediction of the academic achievement of Undergraduate University students, this implies that a decline in openness and extraversion would result in a decline in the academic achievement of Undergraduate University students. The data presented showed that the p values for the Big Five personality traits of Undergraduate Universities students $p < 0.05$ Thus it can be concluded that the null hypothesis of no significant prediction earlier stated is hereby not accepted.

Discussion of findings

The findings showed that Personality traits (openness, conscientiousness, extroversion, agreeableness, and neuroticism) significantly predict students' academic achievement among undergraduate education students in public universities in Adamawa State. While only openness and extraversion demonstrated a negative prediction of the academic achievement of among undergraduate education students in public universities in Adamawa State, this implies that a decline in openness and extraversion would result in a decline in the

academic achievement of Undergraduate University students. The findings was in line with Owonwami, Jude & Sakiyo, (2021) that Personality traits statistically significant predict student's academic achievements among Modibbo Adama University of Technology Yola, Adamawa State, Nigeria but only neuroticism had negative prediction of the academic achievement of among undergraduate education students in Modibbo Adama University of Technology.

Conclusion

The statistical analysis revealed that the p-values for the Big Five personality traits of Undergraduate University students were all less than 0.05. As a result, we can confidently conclude that the null hypothesis, which initially suggested no significant prediction, is not supported by the data. In other words, there is clear evidence to suggest that the Big Five personality traits do play a significant role in predicting the academic achievement among undergraduate education students in public universities in Adamawa State.

Recommendations

Based on the findings of this study, the following recommendations were suggested:

1. It is recommended to counselors that each student is different based on his or her personality traits. The counselors should ensure that they guide the students to adopt a study habit that suits their personality in other to improve their academic achievement
2. The researcher recommends also that parents of students be aware of these traits and differences in students and ways in which these traits affect the academic achievement of their children/wards to provide them with the appropriate support and encouragement to study hard for better academic achievement.
3. The researcher recommends also to the psychologist that it should ensure they encourage these students to set out educational goals and ensure that they are careful enough to achieve them based on the student's personality traits.
4. Given that the previous research focused on Big Five Personality Traits and student Academic Achievement in Adamawa State Universities, it is essential to undertake further research in the broader North East region of Nigeria to draw comparative conclusions.

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