Relationship between Personality Traits and Academic Performance among Undergraduates in Gombe State University, Nigeria

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Abstract
The study examined the relationship between three variables of personality traits that is Extravert, Neuroticism, Openness to experience and academic performance among undergraduates of Gombe State University. Ex-post-factor design was used, purposive sampling techniques was used to draw a sample of 120 from the population of 5247 students of level II, III, and IV of the Faculties of Arts and Social Science, Science, Education, Pharmacy and MBBS. The data were collected using a big five personality inventory with reliability index of 0.79 and 0.87 respectively. To analyzed the data Descriptive statistics and Pearson Product Moment Correlation (PPMC) technique was used, the major findings of the study were; there is negative relationship between extraversion and academic performance among under graduates of Gombe State University the study also found negative relationship between neuroticism personality trait and academic performance among under graduates of Gombe State University., there is positive significant relationship between openness to experience personality trait and academic performance among under graduates of Gombe State University, Based on these findings the study concluded that Personality assessment units should be established by the management of the Nigerian universities so as to enable students understand the personality type or traits as well as its relevance to their academic pursuits, Different method of instructional delivery should be employed by the academic staff of the universities so as to accommodate the variation of the Neuroticism personality trait of students which exert negative influence on their academic performance. Since openness to experience personality traits are product of students’ academic performance, it should be therefore be considered in the admission into appropriate Faculties or Department.

Keywords: Extraversion, Neuroticism, Openness to Experience and academic achievement
Introduction

Understanding the reasons for individual levels of academic performance has always been a concern of educational psychologists. Many educators like Yakasai, and Jan (2015), Gao and Liu (2013) are interested in knowing beforehand who will perform well and otherwise in academic programme. Some researchers’ example Hakimi and Layasani (2011), Garba (2010) believed that personality traits; extraversion, neuroticism, and openness to experiences can be used to explain not only variance in academic performance but also the process by which these traits influence learning outcome. Although Bello (2016) forward other reasons for discrepancies in academic performance with external factors such as school atmosphere, teachers methods, teachers working experiences, availability and the use of instructional materials, Other researcher’s like Barrick and Mount (2011) has established that cognitive ability is one important determinant of academic performance.

Developing knowledge about the factors that affect academic performance can be of great help to improve academic performance thereby avoiding the causes of academic failure. There is existence of individual differences in respect of personality traits or distinctive features either bone with or affected with them in their environment, Moreover, some behavioural tendencies reflected in personality traits also can influence academic performance such as perseverance, conscientiousness, talkativeness which all are traits across the students of Gombe state university.

Personality has been defined by Mangal (2014) from the Latin word ‘persona’ at first this word was used for mask worn by the actors to change their appearance but later on, it began to be used for actors themselves. Since then, the term ‘personality’ has been used to depict outward appearance or external behaviour etc, it is in this sense that we have develop a notion about the term ‘personality’. Psychologically speaking, personality is all that a person is at the totality of one’s behaviour towards oneself as well as others. It includes everything about the person, his physical, emotional, social, mental and spiritual makeup. It is all that a person about himself. Therefore, the term personality signifies something deeper than mere appearance and outward behaviour.

Personality has also been defined by Mark Sharman in his book personality inquiring and application (1979) as the characteristics, pattern of behaviours cognition and emotions which may be experience by the individual and or manifest to others. Personality traits and the emergence of the five factors model of personality provides a useful frame work for examining the relationship between personality construct and academic performance. According to Garba (2010) “The big five factors model of personality has been developed after years of testing by factor analysing a number of personality traits. The big five model was commonly derived from the work of Cattel (1973). Subsequently the next advance in the big five traits theory was made by Goldberg (1990) who advocated the lexical hypothesis that those individual differences that are most silent and socially relevant will come to be encoded into the natural language.” Below are the big five traits stated by Mangal (201);

**Extroversion:** This is characterised by breadth of activities (as oppose to depth), from external activities, energy creation from external means. The traits is marked by pronounce engagement with the
external world. Extroverts enjoy interacting with people, and are often perceive as full of energy. They tend to be enthusiastic, action oriented individuals, they possess high group visibility, like to talk and assert themselves.

**Neuroticism:** Is the tendency of experiencing unpleasant emotion easily, such as anger, anxiety, depression, and vulnerability. Neuroticism also refers to the degree of emotional stability and impulse control and is sometimes referred to by its low pole, “emotional stability”. They are more likely to interpret ordinary situations as threatening, and minor frustration as hopeless difficult, their negative emotions reactions tend to persist for unusual long periods of time which means they are often in a bad mode. For instance, neuroticism is connected to a pessimistic approach towards work, confidence that work impedes personal relationship, and apparent anxiety linked with work.

**Agreeableness:** This refers to such traits as selflessness, good-natured, gentle, cooperative, flexible, tolerance, generous, sympathetic, courteous, and striving for common understanding and maintaining social affiliations, whereas students who are low in agreeableness are more aggressive, less cooperative and isolates. Agreeable people also have an optimistic view of human nature.

**Openness to experience:** Is a general appreciation for arts, emotion, adventure, unusual ideas, imagination, curiosity, and variety of experience. People who are open to experience are intellectually curious, open to emotion, sensitive to beauty and willing to try new things. They tend to be, when compared to close people, more creative and more aware of their feelings. They are also more likely to hold unconventional beliefs.

**Conscientiousness:** This is tendency to show self-discipline, act dutifully, and aim for achievement against measured or outside expectations. It is related to the way in which people control, regulate, and direct their impulse socio economic status, high scores on conscientiousness indicate a preference for plan rather than spontaneous behaviour, the average level of conscientiousness rises among young adults and then declines among older adults.

**Concept of Academic Performance:** For so many years, different researchers have defined the concept “Academic performance” based on their point of view or ways of measuring the student’s academic ambition. Akomolfe (2013) stated that “Cambridge university reporter has frequently defined academic performance in terms of examination performance, on what students have learned or what skills the students have learned and is usually measured through assessment like standardize test, performance test and port polio assessment. (2011, p. 18). Santruock as cited in Zakka (2016) views academic performance as the descriptive assessment information which usually be translated through grading systems such as Grade Point Average(GPA) and course grade.

**Traits theory of personality:** Traits theory is based on the specific mode of behaviour which a person exhibits in a wide variety of circumstances, in a daily usage, people are labelled as honest, friendly, hostile, aggressive, lazy, and hardworking.

**Raymond B. Cattel:** Is an ardent profounder of the traits theory of personality. The basis structural element for him is the traits, he defined trait as a structure of the personality inferred from behaviour in different situations,
Cattel classified traits into four (4) different categories;

1. Common traits; these are traits which are found widely distributed in general population or among all groups. Example of common traits includes honesty, aggression, and cooperation.

2. Unique traits; these traits are possess by special people they are also considered as temperamental traits. Example includes emotion, reaction and energy.

3. Surface traits; these traits can be easily recognise by overt manifestation of behaviour. Example includes curiosity, integrity, honesty, task-fullness, and dependability.

4. Source traits; these traits are the underlying structures or sources that determine the behaviour of an individual. Example includes dominance.

5. Cattel holds a similar contention over the individual traits disposition. But however, contrary to Murrays’ psychogenic needs, he believe that human personality traits could be summarise by sixteen (16) personality factors or main traits and that everybody has some degree of every traits. The conception of the sixteen (16) personality factors was due to Cattel’s efforts to cluster all the personality objectives into sixteen (16) facets of subscales, and through factor analysis he develops the sixteen (16) personality factor models that typically portrays the individuals’ personality traits as he respond to an assessment of device. (Chauhan. 2007, p. 326).

In the study of Bhagat (2013) conducted to explore the relationship between extraversion and academic performance of medical students of international medical programme in Delhi India with a total sample of 70 participant include 49 males and 21 females age 17-23 drawn from a population of 151 students .the results shows the negative correlation between extraversion and academic performance, meaning that student with high extraversion show poor academic performance. The study of Ashton, lee, Vernon and Jang (2009, p 21) in Belgium investigated the relationship of the big five factor of extrovert with the crystallized and fluid aspect of measured intelligence. Approximately 365 participants out of the general population of 9845 completed the personality research from (PFR) and a multidimensional aptitude battery (MAB), their data was analysed using PPCM and found out that extraversion personality trait has a relationship with academic performance.

In 2011 a research conducted by Bates and Rock in Ohio international university USA, where U test was used which consisted of thirty five studies and indicated that there is a very small but statistically significant positive correlation between extraversion personality trait and academic performance. Bates & Rock (2014) in another study where they used Raven’s matrices with a sample of 150 students whose data was collected using personality test inventory (PTI), and their data was statistically analysed using spearman rank order found that extravert performs better with increasing auditory stimulation whereas introvert performed best in silence.

The study of Muhammad (2007, p 74) on students’ personality traits and academic performance using five factor model perspective among undergraduate students of north west Nigeria, a sample of 382 students was drawn from the population of 91,000 students across five Universities, big five personality test was used as instrument for data collection while
A descriptive statistic of mean and standard deviation as well as PPMC was used in data analysis, his findings revealed that all personality traits except extraversion positively and significantly predicted students’ overall grades whereas extraversion was positively related not statistically significant. Openness and neuroticism were more positively related to student’s academic performance and were found to be more important predictors of overall grades of the students than agreeableness and conscientiousness.

In similar study by Chamorro & Furnham (2009) argued that extraversion and neuroticism are also theoretically and empirically associated with ability mainly such as consequence of similarities and mental speed. (high extraversion, low neuroticism ad high intelligence are all related to high mental speed). (2009, p. 320). Ilies (2010) stated that neurotic individual are less likely to be goal oriented, Kanfer and Haggest in Garba (2010) point out that anxiety leads to poor self-regulation because anxious individual are not able to control their emotions necessary to protect on task attention. However Garba (2010) used ex post facto research design on (N=381) from selected Universities of north western Nigeria where he found a positive correlation between openness to experience personality trait and academic achievement with r = 0.039. Another study by Deyoung, Quilty and Peterson (2007, p 9) tested 175 sample out of 517 students using standard measures of cognitive ability and a battery of tasks, they hinted that previous instrument used to measure openness actually assess two distinctive aspect, the first is intellect which reflect intellectual engagement and perceived intelligence and is marked by ideas while the second is emotion which reflects the artistic and contemplative qualities related to being engaged in sensation and perception and is marked by fantasy, aesthetics, feelings and action. On this basis intellect was found to be associated with neural system of working of the memory which is related to intelligence whereas openness was not.

Students’ academic performance is an integral part of a meaningful teaching –process. There was an outcry from the university staff in respect of the poor academic performance of undergraduates of Gombe state university over the years with some alarming rate. It has been observes in 2014/2015, 2016/2017, 2017/2018 and 2018/2019 that records of poor academic performance of some students is becoming more evident in the semester examination results. Academic performance remains the important aspect of Students development in particular and the nation at large. These are the reasons why students’ failure in academic performance is regarded as having a great important aspect that should attract attention at all level of education. a number of factors might be responsible for the poor performance of students such as personality traits that assumed to predict and influence academic performance .

In addition to this, whatever is obtainable in terms of poor academic performance might also be attributed to the biological genes inherited by the individual from his forefathers or due to some environmental factors that influence ones personality and in turn also impacted the academic performance. Still variation could exist in academic performance among students of different level of studies. In line with the fact that undergraduates of Gombe State University varies in their respective personality traits, problem solving ability, perception and
attentiveness during instructional delivery which are all products of one’s personality, there is need of research on the relationship between personality traits and academic performance among undergraduates of Gombe State University.

Objectives of the study
The objectives of the study were to:
1. Establish the relationship between extroversion personality traits and academic performance among undergraduates of Gombe State University.
2. Establish the relationship between Neuroticism personality traits and academic performance among undergraduates of Gombe State University.
3. Establish whether there is relationship between openness to experience and academic performance among undergraduates of Gombe State University.

Hypotheses
1. There is no significant relationship between extroversion and academic performance among undergraduates of Gombe State University.
2. There is no significant relationship between neuroticism and academic performance among undergraduates of Gombe State University.
3. There is no significant relationship between openness to experience and academic performance among undergraduates of Gombe State University.

Methodology
Correlational design was adopted for the present study based on the assumption that the variables under investigation sought for relationship. Descriptive statistics of mean and standard deviation, PPMC was used in analysing the data. The population of this research work consist of all level 200, 300 and 400 students of Gombe state University which stood at 5274 during 2018/2019 academic session. Out of which a sample of 120 students was drawn purposively from five (5) faculties of Arts & Social, Science, pharmacy, MBBS and Education to serve as the sample of the study. 

Personality inventory scale was adapted from Garba (2010) that is the big five personality inventory by Goldberg. The instrument was validated and pilot tested to ensure construct and criterion related validity and reliability. Cronbach Alpha reliability indexes of 0.86, 0.86 and 0.86 were respectively reported.

The adapted version of the questionnaire consist of thirty questions where question 1-10 comprises questions that asses extraversion personality trait, 11-20 are questions on Neuroticism personality traits and 21-30 are questions on openness to experience personality traits. Each of the thirty questions consists of five likert scale of very inaccurate, moderately inaccurate, neither inaccurate nor accurate, moderately accurate, and very accurate.

The validity of the instrument was reported by its author to have both construct and criterion related validity. Garba (2010) has also validates the big five personality test after modification and established content and construct validity of the instrument. Thus, Garba (2010) reported the reliability index of alpha 0.86, 0.86 and 0.86 for conscientiousness, extraversion and neuroticism respectively as obtain by Goldberg (1992). Also in his study Garba (2010) reported the Cronbach alpha coefficient 0.71 across the five traits the instrument designed to measure. The researcher administered the instrument to the selected samples by himself during the first semester in the respected faculties/departments, the students required to fill the
questionnaire instantly and returned same to the researcher.

Results

Null Hypothesis One: There is no significant relationship between Extraversion Personality Trait and Academic Performance among Undergraduates of Gombe State University. The data was analysed using Pearson Product Moment Correlation as shown in Table 1 below.

Table 1: PPMC analysis showing relationship between extraversion and academic performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>r</th>
<th>p</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>120</td>
<td>83.91</td>
<td>13.28</td>
<td>-0.521</td>
<td>.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Academic Performance</td>
<td>120</td>
<td>2.89</td>
<td>.842</td>
<td>0.596</td>
<td>.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Based on the obtained correlation value (r= - .521, p= .000, p < .05), a statistically significant negative relationship exist between extraversion personality traits and Undergraduates academic performance. Based on the obtained result, the stated null hypothesis was rejected.

Null Hypothesis Two: There is no significant relationship between Neuroticism Personality traits and academic performance among Undergraduate of Gombe State University. The data was analysed using Pearson Product Moment Correlation as shown in Table 2 below.

Table 2: PPMC analysis showing relationship between Neuroticism and Academic Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>r</th>
<th>p</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>120</td>
<td>83.08</td>
<td>13.44</td>
<td>-0.325</td>
<td>.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Academic Performance</td>
<td>120</td>
<td>2.92</td>
<td>3.11</td>
<td>0.314</td>
<td>.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

From the above table 2 a correlation value of r= -0.325 represent the correlation between Neuroticism Personality traits and academic performance while the P value is .000 represent the significant level. Based on the obtained value (r= -0.325, p=0.000, p< .05). A statistically negative relationship exists between Neuroticism Personality traits and academic performance. Therefore the null hypotheses is rejected

Null Hypothesis Three: There is no significant relationship between openness to experience personality traits and academic performance among Undergraduate of Gombe State University. The data was analysed using Pearson Product Moment Correlation as shown in the Table 3 below.

Table 3: PPMC analysis showing relationship between Openness to Experience and Academic Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>R</th>
<th>p</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness to Experience</td>
<td>120</td>
<td>87.71</td>
<td>12.33</td>
<td>.487</td>
<td>.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Academic Performance</td>
<td>120</td>
<td>3.48</td>
<td>.708</td>
<td>0.487</td>
<td>.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

In order to test the stated null hypothesis that there is no significant relationship between Openness to experience and academic performance among undergraduate students of Gombe State University, the correlation value of r = .487 represents the correlation between Openness to experience and academic performance while the p-value of p= .000 represents the significance level. Based on the obtained correlation value (r= .487, p= .000, p < .05), a statistically significant positive relationship exist between Openness to experience and undergraduate students academic performance. Based on the obtained result, the stated null hypothesis was rejected. The findings revealed that a statistically significant positive relationship
exist between Openness to experience and academic performance among Undergraduates of Gombe State University.

**Summary of Findings**

The following is summary of the major findings of the study:

1. Personality traits of extraversion negatively correlate with the student’s academic performance. This means that higher level of student’s extraversion, brings about lower level of academic performance.

2. High level of neuroticism personality trait lead to low level of academic performance of the undergraduate students of Gombe State University.

3. It also proved that Openness to experience correlates with students’ academic performance, meaning that students with high level of Openness to experience perform better academically with those (students) with low Openness to experience personality traits.

**Discussion of Findings**

The present study shows that students personality trait of extraversion is negatively correlated with their performance, this implies that high level of extraversion personality traits brings about a decrease in students’ academic performance. The findings therefore prove the previous findings of meta-analysis study by Akomolfe and AbdulRazak (2013), Fazeli (2012), Hakimi and Layasani (2011) who found extraversion personality trait as highly correlates with student’s academic performance. This shows that level of extraversion personality traits plays a significant role in their academic performance with those with high level of perform better academically.

In testing hypothesis two (Ho2), Neuroticism personality trait was found to have negative correlation with academic Performance and this study is in line with the findings of Yakasai and Jan (2015), who studied Neuroticism and academic performance and found that the high level of Neuroticism leads to low academic performance, in the same vein Garba (2010) in his study on the relationship between personality traits and social adjustment among undergraduate students of some selected universities in north western Nigeria indicated that Neuroticism perform low academically when compared with students with introversion, conscientiousness personality traits. This findings therefore states that students with high level of Neuroticism personality traits react and concentrate less or negatively to their academic performance.

Testing hypothesis three (Ho3), Openness to experience personality traits was found to have positive correlation with students’ academic performance, this findings therefore support the research conducted by Garba (2010) who found Openness to experience personality traits significantly correlate with students’ academic performance, it is also in line with the study conducted by Barrick and Mount (2011) who found positive correlation between personality trait of openness to experience and academic performance, it is also in line with the findings of O’connor and Paunomen (2007) and Garba (2010) who both found openness to experience personality trait positively correlate with academic achievement, this signifies that high level of openness to experience personality trait is an important predictor of students’ academic performance.

**Conclusion**

Based on the findings, the study concludes that personality traits of extraversion inversely correlate with student’s academic performance. This means that higher level of student’s extraversion, brings about lower level of academic performance. High level of neuroticism personality trait lead to low level of academic performance of the undergraduate students of Gombe State University. It also proves that openness to
experience personality traits correlates with students’ academic performance, meaning that students with high openness to experience personality traits perform better academically than those (students) with low openness to experience personality traits.

**Recommendations**
1. Since extraversion correlates inversely with student’s academic performance, university lecturers should employ variety of instructional methods that would accommodate students with extraversion trait.
2. Different method of instructional delivery should be employed by the academic staff of the universities so as to accommodate the variation of the Neuroticism personality trait of students which exert negative influence on their academic performance.
3. Since openness to experience personality traits interplay with students’ academic performance, it should therefore be considered during admission of students into appropriate faculties and or departments.

**References**


