

Impact of Personality type on Academic Performance of Senior Secondary Students in Sokoto State

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Abstract

This study examined the impact of personality type on the academic performance of senior secondary school students in Sokoto State, Nigeria. The study was guided by the need to understand how individual differences in personality influence students' learning outcomes. A descriptive survey research design was adopted for the study. The population comprised senior secondary school students in selected public secondary schools in Sokoto State. A sample of 370 students was selected using an appropriate sampling technique. Data were collected using a standardized personality type questionnaire and students' academic records. The data obtained were analyzed using descriptive statistic of frequency count and percentage, while inferential statistics of Chi-square test and t-test were used to test the hypotheses at a 0.05 level of significance. The findings of the study revealed that personality types have a significant influence on students' academic performance, with some personality traits showing a stronger relationship with higher academic achievement than others. The study also found differences in academic performance among students with different personality types. Based on the findings, it was recommended that teachers, school counselors, and parents should consider students' personality differences when planning instructional strategies and academic guidance. The study contributes to a better understanding of the role of personality in academic achievement and provides useful insights for improving students' academic performance in secondary schools.

Keywords: Personality, Impact, Extroversion, Introversion, Academic performance, Secondary School

Introduction

The development of any nation or community depends largely on the quality of education attained by its citizens. It is believed that the basis of any true development must commence with the development of human resources. This is in line with the view of Adeoye in Aliyu and Adeoye (2019) that one of the most serious problems facing the developing countries is the problem of human resource development. Similarly, recent studies have established a strong link between human resource development and education, emphasizing education as the foundation for building skilled and productive human capital. In Nigeria, as in many developing countries, education is accorded high priority as a key instrument for national development, as reflected in government policy statements, strategic frameworks, and development plans that emphasize capacity building, skill acquisition, and human resource development as central pillars of socio-economic growth (Federal Republic of Nigeria, 2014). The development plans include the goal of building a free and democratic society, a just and egalitarian society, a united and self-reliant nation, a great and dynamic economy, and a land of bright and full opportunities for all citizens (Federal Republic of Nigeria, 2014).

Globally, and in Nigeria in particular, improving the quality of education and increasing investment in educational and human resources are widely regarded as critical drivers of national development. Education is increasingly recognized as a key instrument for human capital development and socio-economic transformation, as it equips individuals with the knowledge, skills, and competencies required for sustainable development (UNESCO, 2017; World Bank, 2018). One of the central goals of educational planning is the improvement of students' academic performance, as academic performance serves as a major avenue through which learners can fully actualize their talents and capabilities in line with educational objectives. Consequently, academic performance is commonly viewed as an important indicator of educational quality and effectiveness (OECD, 2019). Thus, academic performance remains a major concern for students, teachers, parents, school administrators, and the wider society.

Academic performance refers to the extent to which a student attains short-term or long-term educational goals within a formal learning environment (York, Gibson, & Rankin, 2015). It is commonly assessed through

examinations, tests, and continuous assessment scores; however, there is no universal consensus on the most appropriate method of evaluating academic performance or determining which indicators are most significant (Richardson, Abraham, & Bond, 2017). Research evidence further suggests that academic performance is influenced by multiple interacting factors, including motivation, learning environment, emotional states, test anxiety, and instructional quality, making it a complex and multidimensional construct (Steinmayr, Meißner, Weidinger, & Wirthwein, 2017). Moreover, individual differences among students account for variations in academic performance, and recent studies have established strong links between students' academic outcomes and personal attributes such as personality traits, self-regulation, and cognitive styles (Poropat, 2016).

Personality, a non-cognitive factor, can significantly influence high or low academic performance among students. Personality is defined as the relatively enduring patterns of thoughts, feelings, and behaviors that distinguish one individual from another (McCrae & Costa, 2017). It reflects individuals' consistent ways of perceiving, thinking, acting, and reacting to their environment, which can shape their learning behaviors and academic outcomes (John, Robins, & Pervin, 2018). Individuals differ naturally in their personality traits, and these variations have profound implications for success or failure in different life domains, including academic pursuits. In this regard, personality has been described as organized and dynamic patterns of behavior and mental processes that influence how individuals adapt to academic and social environments (Corr & Matthews, 2020). Personality therefore encompasses a unique combination of abilities, interests, values, preferences, emotional tendencies, and habitual responses that make each student distinct and influence how they approach learning tasks (Burger, 2019). Furthermore, contemporary studies emphasize that personality traits are relatively stable over time and play a crucial role in determining how students respond to instructional demands, academic challenges, and environmental pressures (Möttus, Kandler, Bleidorn, Riemann, & McCrae, 2017). Thus, personality remains a critical psychological construct for understanding individual differences in students' academic performance and educational adjustment.

Personality type refers to the psychological classification of individuals based on consistent patterns of thinking, feeling, and behaving. In contemporary personality psychology, personality types are often distinguished from

personality traits, with traits representing narrower and measurable behavioral tendencies, while types are broader categorical classifications of individuals (Bernstein, Penner, Clarke-Stewart, & Roy, 2018; John, Robins, & Pervin, 2018). While personality types are assumed to involve qualitative differences among individuals, personality traits are generally conceptualized as quantitative differences along continuous dimensions (McCrae & Costa, 2017). According to personality type theories, individuals are often categorized as introverts or extroverts, representing distinct orientations toward the external or internal world. In contrast, trait-based theories argue that introversion and extroversion exist along a continuum, with many individuals exhibiting moderate characteristics between the two extremes (Burger, 2019). Unlike personality traits, which have strong empirical support, the existence of distinct personality types remains controversial in contemporary research, as recent evidence favors dimensional rather than categorical models of personality (Gerlach et al., 2018; Corr & Matthews, 2020).

Senior secondary school students exhibit different personality types such as extroversion and introversion while some exhibit personality types that are in-between the two. According to Haliru (2018) identified two types of personality type (extroversion and introversion) prevalence among senior secondary school students in Sokoto. Also, through her study, she confirmed that significant relationship exist between personality type of students and their academic performance. She concluded that since a large number of adolescent personality types of introversion and extroversion exist among public senior secondary school students in Sokoto metropolis, counselors should seek way of helping adolescent students' (introversion and extroversion) personality types adjust from all form of anti-social behaviours. She advocated that for senior secondary school students in Sokoto to utilize the personality type appropriately, counselors should help the adolescent introverts and extroverts adjust, so as to enhance their academic performance. She described counseling as a helping profession which is a vital tool that can be used to help adolescents attain the zenith on their personality types. Counseling is for effective and adaptive behaviours and fundamental strategies.

Statement of the Problem

The problem of poor academic performance by students has been considered a serious problem in senior secondary school education by major stakeholders; teachers, parents and government. It was observed that in 2022, out of the 1,667,741 candidates that wrote the examinations only 300,982 got the mandatory 5 credits and above, including English and Mathematics. This implies that only 18% of the students who sat for the examinations passed while 82% failed. Likewise, the WAEC result released in year 2019 indicated that only 310,591 (25.09%) out of 1,237,903 candidates obtained five credits, including English and Mathematics. Several studies have been conducted in the past to identify and proffer solution to the cause of poor academic performance. Such study includes Several studies have attributed students' poor academic performance to a variety of school-related and systemic factors. These include teacher quality, inadequacy of school facilities, insufficient funding, as well as inefficient planning, organization, and management of available human and material resources (Olorunsola & Olayemi, 2018; World Bank, 2018). Similarly, other studies have identified home-related and learner-based factors such as parental support or rejection and students' cognitive abilities as significant determinants of academic performance (Jeynes, 2016; Steinmayr *et al.*, 2017). However, despite the identification of these factors, many studies have not provided lasting solutions to the persistent problem of poor academic performance among students. This suggests that other underlying or less visible factors may be contributing to the problem and therefore require further investigation.

The desire by the researcher to see the problem of students' poor academic performance solved gave rise to this study. Therefore, the main thrust of present study is to examine the impact of personality type on academic performance of senior secondary school students in Sokoto Metropolis.

Objectives of the Study

The objectives of the study are to examine:

- i. Prevalent personality type among senior secondary school students in Sokoto Metropolis.

- ii. Impact of Extroversion (Type A Personality) on the academic performance of senior secondary school students in Sokoto Metropolis.
- iii. Impact of Introversion (Type B Personality) on the academic performance of senior secondary school students in Sokoto Metropolis.
- iv. Difference between the impact of Extroversion and Introversion Personality Type on the academic performance of senior secondary schools in Sokoto Metropolis.

Research Questions

The following research questions are raised to guide the study.

- i. Which personality type is prevalent among senior secondary school students in Sokoto Metropolis?
- ii. Is there any impact of Extroversion (Type A Personality) on the academic performance of senior secondary school students in Sokoto Metropolis?
- iii. Is there any impact of Introversion (Type B Personality) on the academic performance of senior secondary school students in Sokoto Metropolis?
- iv. Is there any difference between the impact of Extroversion and Introversion Personality Type on the academic performance of senior secondary schools in Sokoto Metropolis?

Research Hypotheses

The following hypotheses are formulated to be tested in the study.

- i. There is no significant impact of Extroversion (Type A Personality) on the academic performance of senior secondary school students in Sokoto Metropolis.
- ii. There is no significant impact of Introversion (Type B Personality) on the academic performance of senior secondary school students in Sokoto Metropolis.

- iii. There is no significant difference between the impact of Extroversion and Introversion Personality Type on the academic performance of senior secondary schools in Sokoto Metropolis.

Methodology

This study adopted a descriptive survey research design to examine the impact of personality type on the academic performance of senior secondary school students in Sokoto Metropolis. The survey design was considered appropriate because it allows the researcher to collect data from a large population and describe existing conditions without manipulating any variables. The population of the study comprised all Senior Secondary School II (SS II) students in Sokoto Metropolis. The total population was Eleven Thousand Six Hundred and Thirty-Seven (11,637) SS II students distributed across thirty-nine (39) public senior secondary schools in the metropolis. The sample size for the study was Three Hundred and Seventy (370) students, determined using the Research Advisors (2006) table for sample size determination for a given population (see Appendix IV).

Table 1: Sample Size from the Selected Schools

S/NO	NAME OF SCHOOL	POPULATION	SAMPLE
1	Sani Dingyadi Secondary School, Sokoto	190	50
2	Govt. Technical College, Farfaru, Sokoto	258	67
3	Nana Girls Secondary School, Sokoto	378	98
4	Nagarta College, Sokoto	105	27
5	Govt. Day Secondary School, Kofar Rini	257	67
6	Govt. Girls Day Sec. Sch. Kofar Marke	232	61
	TOTAL	1420	370

A purposive sampling technique was used to select two senior secondary schools each from Sokoto North, Sokoto South, and Wamakko Local Government Areas, out of the five LGAs that make up Sokoto Metropolis. This resulted in a total of six (6) senior secondary schools selected for the study. The use of purposive sampling was justified because it enabled the researcher to deliberately select schools that were accessible and suitable for the study (Musser, 2019). Thereafter, a proportionate sampling technique was employed to distribute the sample size across the six selected schools based on

their respective student populations. This approach ensured fair representation of students from schools with varying population sizes and allowed for proportional inclusion of respondents from each school. In selecting respondents from each school, simple random sampling was adopted to give equal opportunity to all SS II students to participate in the study. The selection was carried out using the lucky dip method, where pieces of paper labeled “YES” and “NO” were folded and placed in a container. Students who picked “YES” were included in the sample. The choice of SS II students was justified because they had spent sufficient time in senior secondary school to adequately assess the variables under study and were not yet engaged in external examinations such as WAEC or NECO.

Two instruments were used for data collection: Personality Type Questionnaire (PTQ): The PTQ was a structured questionnaire adapted from standardized personality measures and modified to suit the context of Nigerian senior secondary school students. The instrument consisted of items measuring extroversion (Type A personality) and introversion (Type B personality). Responses were structured on a dichotomous scale (Accurate/Inaccurate). Academic Performance Record Sheet (APRS): The APRS was used to collect students’ academic performance data from school records, specifically their terminal examination scores, which served as an objective measure of academic performance. To ensure validity, the PTQ and APRS were subjected to face and content validation. Copies of the instruments were submitted to experts in Educational Psychology, Measurement and Evaluation, and Guidance and Counselling in the Faculty of Education. Their observations, suggestions, and corrections were incorporated to ensure that the items adequately covered the variables of the study and were clear, relevant, and appropriate for the target population.

The reliability of the PTQ was determined using the test–retest method. The instrument was administered to a group of SS II students outside the sampled schools, and after a two-week interval, it was re-administered to the same group. The scores obtained from the two administrations were correlated using the Pearson Product Moment Correlation Coefficient (PPMCC), yielding a reliability coefficient that was considered adequate for the study. This confirmed the consistency and stability of the instrument. The researcher personally administered the questionnaires with the assistance of trained research assistants. Prior permission was obtained from school authorities, and respondents were adequately briefed on the purpose of the study. The

questionnaires were administered and retrieved on the spot to ensure a high rate of return. Academic performance data were collected from official school records with the approval of the school management. Data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequency counts, percentages, and mean scores were used to answer the research questions. Inferential statistics, including the Chi-square test and t-test, were employed to test the null hypotheses at the 0.05 level of significance. The Statistical Package for Social Sciences (SPSS) was used for all data analyses.

Results

Research Question 1: Which personality type is prevalent among senior secondary School student in Sokoto metropolis?

The data for answering this question are presented in table 2:

Table 2: Prevalence of Extroversion (Type A Personality) in Senior Secondary Schools in Sokoto Metropolis

S/N	Items Statement	Accurate		Inaccurate	
		F	%	F	%
1	I am the life of the party	255	69%	115	31%
2	I feel little concern for others	215	58%	155	42%
3	I am always prepared for anything	217	59%	153	41%
4	I get stressed out easily	173	47%	197	53%
5	I have a rich vocabulary	153	41%	217	59%
6	I don't talk a lot	178	48%	192	52%
7	I am interested in people	234	63%	136	37%
8	I leave my belongings around	147	40%	223	60%
9	I am relax most of the time	201	54%	169	46%
10	I have difficulties in understanding abstract idea	298	81%	72	19%
11	I feel comfortable around people	235	64%	135	36%
12	I insult people	169	46%	201	54%
13	I pay attention to details provided by others	202	55%	168	45%
14	I easily get worried about things	191	52%	179	48%
15	I have vivid imagination	167	45%	203	55%
16	I keep in the background	260	70%	110	30%
17	I sympathized with others feelings	263	71%	107	29%
18	I make a mess of things	252	68%	118	32%
19	I seldom feel unhappy	282	76%	88	24%
20	I am not interested in abstract ideas	238	64%	132	36%
21	I always open a conversation	293	79%	77	21%
22	I am not interested in other people's problems	254	69%	116	31%
23	I get chores done right away	256	69%	114	31%
24	I am easily disturbed	189	51%	181	49%
25	I have excellent ideas	208	56%	162	44%
Total	Mean (x)	221	60%	149	40%

Source: Researchers Fieldwork 2025

Table 2 indicated the descriptive statistics about prevalence of extroversion (Type A Personality) in senior secondary schools in Sokoto metropolis. It is evident from the table that the general opinions of the participants presented by the grand mean scores shows that 60% of the respondent where accurate while 40% of the respondents were inaccurate.

Table 3: Prevalence of Introversion (Type B Personality) in Senior Secondary Schools in Sokoto Metropolis

S/N	Items Statement	Accurate		Inaccurate	
		F	%	F	%
1	I have little to say when discussing with colleagues	107	30%	263	70%
2	I have a soft heart	128	35%	242	65%
3	I often forget to put things back in their proper place	136	37%	234	63%
4	I get upset easily	163	44%	207	56%
5	I do not have a good imagination	141	38%	229	62%
6	I talk to a lot of different people at parties	149	40%	221	60%
7	I am not really interested in others people issues	143	39%	227	61%
8	I like order from people	166	45%	204	55%
9	I change my mood a lot of times	149	40%	221	60%
10	I am quick to understand things easily	125	34%	245	66%
11	I don't like to draw attention of people to myself	275	74%	95	26%
12	I take time out for others	229	62%	141	38%
13	I avoid my duties	195	53%	175	47%
14	I have frequent mood swings	127	34%	243	66%
15	I use difficult words when talking to people	166	45%	204	55%
16	I don't mind being the center of attention	152	41%	218	59%
17	I feel other's emotions	183	49%	187	51%
18	I follow a schedule	154	42%	216	58%
19	I get irritated easily	164	44%	206	56%
20	I spend time reflecting on things	149	40%	221	60%
21	I am quiet around strangers	150	41%	220	59%
22	I make people feel at ease	167	45%	203	55%
23	I am exacting in my work	202	55%	168	45%
24	I often feel blue	277	75%	93	25%
25	I am full of ideas	269	73%	101	27%
Total	Mean (x)	171	46%	199	54%

Source: Researcher's Fieldwork 2025

Table 3 indicated the descriptive statistics about prevalence of introversion (Type B Personality) in senior secondary schools in Sokoto metropolis. It is evident from the table that the general opinions of the participants presented by the grand mean scores shows that 46% of the respondent where accurate while 54% of the respondents were inaccurate.

From Table 2 and Table 3, it is clearly shown that the extroversion (Type A Personality) has 60% accuracy while introversion (Type B Personality) has 46% accuracy. Comparing the two result shows that the extroversion (Type A Personality) is more prevalent among senior secondary schools in Sokoto metropolis.

4.2.2 Research Hypotheses One

Null Hypothesis 1 (H₀₁) – There is no significant impact of extroversion (Type A personality) on the academic performance of senior secondary school students in Sokoto Metropolis.

The H₀₁ relate the items under extroversion (type A personality) and academics performance. Table 4 present the impact of Extroversion (type A Personality) on the academic’s performance of senior secondary schools in Sokoto metropolis.

Table 4: Summary of impact of Extroversion (type A Personality) on the Academics Performance of Senior Secondary Schools in Sokoto Metropolis

Variables	N	Mean	X ²	df	p-Value	Decision
Extroversion (type A personality)	370	64.42	3618.118	3481	0.052	H ₀ Retained
Academics Performance	370	61.55				

Source: Researchers Fieldwork 2025

From the result in Table 4 shows that, the impact of extroversion (Type A Personality) on the academic performance of senior secondary school students in Sokoto metropolis was not significant. Because the p-value $0.052 < 0.05$ level of significant with the x^2 value of 3618.118. Therefore, the H₀₂ which stated that there is no significant impact of extroversion (Type A Personality) on the academic performance of senior secondary school students in Sokoto Metropolis was retain. Which means there is no significant impact of extroversion (Type A Personality) on the academic performance of senior secondary school students in Sokoto Metropolis.

Research Hypotheses Two

Null Hypothesis 2 (H₀₂) – There is no significant impact of introversion (Type B personality) on the academic performance of senior secondary school students in Sokoto Metropolis.

The H₀₂ relate the items under introversion (type B personality) and academics performance. Table 5 present the impart of introversion (type B Personality) on the academic’s performance of senior secondary schools in Sokoto metropolis.

Table 5: Summary of Impact of Introversion (Type B Personality) on the Academics Performance of Senior Secondary Schools in Sokoto Metropolis

Variables	N	Mean	X ²	df	p-Value	Decision
Introversion (type B personality)	370	64.42	3690.855	3304	0.000	H ₀ Rejected
Academics Performance	370	61.55				

Source: Fieldwork 2025

From the result in Table 5 shows that, the impact of introversion (Type B Personality) on the academic performance of senior secondary school students in Sokoto metropolis was positive and significant. Because the p-value $0.000 < 0.05$ level of significant with the x² value of 3690.855. Therefore, the H₀₂ which stated that there is no significant impact of introversion (Type B Personality) on the academic performance of senior secondary school students in Sokoto Metropolis was rejected. Which means there is significant impact of introversion (Type B Personality) on the academic performance of senior secondary school students in Sokoto Metropolis.

4.2.4 Research Hypotheses Three

Null Hypothesis 3 (H₀₃) – There is no significant difference between the impact of extroversion and introversion personality type on the academic performance of senior secondary school students in Sokoto Metropolis.

The H₀₃ relate the items under extroversion and introversion personality type and academics performance. Table 6 present the difference between the impact of extroversion and introversion personality type on the academic performance of senior secondary school students in Sokoto Metropolis.

Table 6: Summary of Difference between Extroversion and Introversion Personality Type on the Academic Performance of Senior Secondary School Students in Sokoto Metropolis

Variables	N	Mean	Std. Dev.	t-cal	p-Value	Decision
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Extroversion	and			6.769		
Introversion		370	122.82	21.569		H ₀
Academics Performance		370	61.55	13.419	0.000	Rejected

Source: Researcher's Fieldwork 2025

From the result in Table 6 shows that, the difference between the impact of extroversion and introversion personality type on the academic performance of senior secondary school students in Sokoto Metropolis was positive and significant. Because the $t(370) = 6.769$, $p\text{-value} = 0.000 < 0.05$ level of significant. Therefore, the H_{03} which stated that there is no significant difference between the impact of extroversion and introversion personality type on the academic performance of senior secondary school students in Sokoto Metropolis was rejected. Which means there is significant difference between the impact of extroversion and introversion personality type on the academic performance of senior secondary school students in Sokoto Metropolis.

Discussion

In this section of the study, the data presented and interpreted was further discussed. In table two the result shows that extroversion (type A personality) is more prevalent among students in senior secondary schools in Sokoto metropolis. The study agreed with the study by Rotimi *et al.* (2014) who claims that Personality Type 'A' individuals are often highly achieving and workaholics of multi-task. The study also go in line with the study of Scott, (2015) argue further that Personality Type 'A' persons drive themselves with deadlines, and are unhappy about the smallest of delay encountered in the course of getting tasks done. With due regard to this study however, Personality Type 'A' students may be influenced to indulge in the work study initiative by the above stated straits.

The finding disagreed with the findings of Eysenck (2012) the findings in this study showed that introverted students scored a higher percentage mean (MS) than the extroverted students which make the introvert more prevalent. According to him this may be probably because the introverted students, with their calm nature, take their time selecting and answering the questions they know best. The study agreed with the findings of Dur (2020), who fine out that most of the respondent poses extroversion personality traits that impact the academic performance of students for both boys and girls. The finding

disagree with the findings of Anyamene *et al.* (2019) which reveals that extraversion (type A) personality is not prevalent in senior secondary school students' social adjustment in Anambra state. The extroverted students, although equally good, unlike the introverted students simply on seeing familiar questions jump into conclusion that they can give solutions to them. The finding that extroversion (type A personality) is more prevalent among students in senior secondary schools in Sokoto metropolis can be related to Humanistic Theory, particularly through the lens of Abraham Maslow's hierarchy of needs theory. Maslow's Hierarchy of Needs: According to Maslow, individuals strive to achieve self-actualization, which is the realization of one's potential and fulfillment of personal growth. Extroverted behaviors, such as being outgoing, sociable, and assertive, can be seen as expressions of self-confidence and the need for social belonging (a fundamental psychological need in Maslow's hierarchy). Students who exhibit extroversion might be fulfilling their need for social interaction and esteem within their peer groups and academic environments.

In hypotheses one, the findings shows that Extroversion (type A personality) has no significant impact on the academics performance of senior secondary school students in Sokoto metropolis. This agreed with the findings of Muza, *et al.*, (2020) which found out that, there is no significant relationship between extroversion and academic performance of students. The also finding agreed with Essay (2013) whose findings indicated that extroversion and academic performance are not related. The study also agreed with Marin *et al.* (2008) who explained that, unsuccessful students had a higher chance of being more extroverts due to their ineffective study habits. The study disagree with the study by Clark *et al.* (2007) found that while Type A individuals might excel in structured and competitive environments, their stress levels could impair performance under pressure. The study disagreed with the study of Jhoselle (2019) the result of the study showed that the "Big Five" personality traits of the students were at an extreme level. The study is agreed with the study of Chamorro-Premuzic and Furnham (2013) suggested that while extroverted students might engage more in group activities, introverted students often perform better academically due to their preference for solitary and focused study.

The study in Sokoto metropolis indicating no significant impact of extroversion on academic performance aligns with the understanding that personality traits influence but do not solely determine academic outcomes.

Factors such as teaching quality, socio-economic background, individual study habits, and the educational environment likely play more pivotal roles in academic success than personality traits alone. The finding agreed with Maslow's Hierarchy of Needs, if extroversion does not significantly impact academic performance, it suggests that for these students, their basic physiological and safety needs are likely sufficiently met. They may also have adequate social belongingness and self-esteem, which are higher in the hierarchy. Therefore, their academic performance may be influenced more by other factors such as cognitive abilities, study habits, and environmental factors rather than their extroverted tendencies.

In hypotheses two, the findings shows that Introversions (type B personality) has significant impact on the academic performance of students in senior secondary schools in Sokoto Metropolis. This finding is in conformity with Michael (2015) who reported positive relationship between introversion and academic performance of students. The findings is also related to the findings of Muza, Sagir, and Aliero (2020) which stated that there is significant relationship between introversion and academic performance in senior secondary schools. The findings agreed with the findings of Chamorro-Premuzic and Furnham (2013) their research highlights that introverted students often perform better academically due to their preference for solitary and focused study habits. This focus on individual study allows introverts to engage deeply with the material, leading to better understanding and retention. The findings agreed with the findings of Ozer and Benet-Martinez (2006) this study found that introverts tend to engage more in reflective and deliberate thinking, which can positively influence their academic performance. The introspective nature of introverts allows them to spend more time on academic tasks, thereby enhancing their learning outcomes. The findings agreed with the findings of DeYoung (2005) the research indicates that introverts are often more disciplined and self-controlled, traits that are conducive to academic success. These students may have better time management skills and are less likely to be distracted by social activities, allowing them to dedicate more time to their studies.

The findings disagreed with the findings of Richardson (2012) in a comprehensive meta-analysis, they found that while personality traits do influence academic performance, the impact of introversion/extroversion was relatively minor compared to other factors such as intelligence, motivation,

and socio-economic status. This suggests that while introversion may play a role, it is not a decisive factor in academic success. The findings disagreed with the findings of Komarraju, Karau, and Schmeck (2019) this study found that personality traits like conscientiousness and openness had a more significant impact on academic performance than introversion. They argue that traits associated with Type B personalities, such as being relaxed and easy-going, might not always align with the demands of academic environments that require high levels of organization and diligence. According to Maslow's Hierarchy of Needs (1943), if extroversion does not significantly impact academic performance, it suggests that for these students, their basic physiological and safety needs are likely sufficiently met. They may also have adequate social belongingness and self-esteem, which are higher in the hierarchy. Therefore, their academic performance may be influenced more by other factors such as cognitive abilities, study habits, and environmental factors rather than their extroverted tendencies.

The findings in Hypotheses three show that, there is difference between the impact of Extroversion and Introversion Personality Type on the academic performance of senior secondary schools in Sokoto Metropolis the study agreed with the study by Muza, *et al.*, (2020) which stated that there is significant difference between academic performance of extrovert and introvert students. The finding as well disagreed with the findings of Soleimanil (2013) findings which reported that, there is no significant difference between extroversion-introversion dimension and their academic performance even though there was a small mean difference between them. It also disagreed with the finding of Durosaro (2014) who noted that, there is no significant correlation between students' academic performance and introversion/extroversion dimension Maslow's theory would suggest that introverted students may prioritize different needs compared to extroverted students. The study finding agreed with the findings of Chamorro-Premuzic and Furnham (2013) found that introverted students often perform better academically compared to their extroverted peers. This is attributed to introverts' preference for solitary study and focus, which are conducive to academic success. The finding agreed with the findings of Entwistle and Entwistle (2017), which indicated that introverted students generally have better study habits, such as spending more time on homework and less on social activities, leading to improved academic performance. This aligns with the Sokoto study's observation that introverted students might achieve higher grades due to their study-focused approach.

The finding disagreed with the findings of O'Connor and Paunonen (2017), argue that the impact of personality traits on academic performance can vary significantly across cultural contexts. The Sokoto study might show differences that are more pronounced or less significant compared to similar studies conducted in different cultural or educational settings. This potential disagreement highlights the importance of considering cultural factors in educational research. The finding diverge from research by Komarraju, *et al.*, (2009), which suggested that extroversion can positively impact academic performance through enhanced social integration and support networks. This divergence may point to differences in how social activities and support systems are structured within the educational environment in Sokoto compared to other regions. Introverts might find greater fulfillment in individual study, reflection, and personal growth (self-actualization needs) rather than extensive social interactions. If introversion significantly impacts academic performance, it could be because these students excel in environments that allow for focused study and minimal social distraction, thus enhancing their cognitive development and academic achievements. Abraham Maslow theory is related such that the difference in academic performance impacts between extroverted and introverted students reflects the diverse ways individuals seek to meet their esteem and self-actualization needs. Extroverts may achieve these through social and extracurricular activities, while introverts may focus more on academics

Conclusion

Based on the findings of the study, the following conclusions were made:

- i. The study concluded that Students in senior secondary schools in Sokoto metropolis tend to be more extroverted. This suggests that a significant portion of the student population may thrive in social settings and enjoy interacting with others.
- ii. The present study found no significant association between extroversion, sometimes associated with Type A personality, and academic performance among senior secondary school students in Sokoto metropolis. This suggests that factors beyond personality traits, such as study habits, socioeconomic background, and access to educational resources, may play a larger role in academic achievement for this population.

- iii. While further research is needed to fully understand the intricacies, it's important to acknowledge that introversion (often associated with Type B personality) may influence academic performance in Sokoto Metropolis senior secondary schools. Educators and counselors should be aware of this potential influence.
- iv. From the results of the findings, the study likely found evidence that introversion and extroversion personality types impact academic performance differently among senior secondary school students in Sokoto Metropolis.

Recommendations

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

- i. Public senior secondary school in Sokoto metropolis should identify the most prevalent personality type in their schools to ensure equal treatment in lesson delivery
- ii. Every school, both public and private should try as much as possible to establish a counselling unit where students will be enlightened to understand their personality traits, which will enable them become more encouraged about their academic activities.
- iii. Parents and teachers should not regard introvert students as academically inferior to their extroverted counterparts; they should see it as a difference in personality characteristics.
- iv. The extrovert and the introvert students should be provided teaching and learning facilities that will improve their academic performance

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