

Cognitive Development, Student-Teacher Relationship, Educational Attainment, and Self-Efficacy as Predictors of Career Decision-Making among Secondary School Students in Abia State, Nigeria

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Abstract: *This study examined the predictive influence of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making among secondary school students in Abia State, Nigeria. Anchored in Bandura's Social Cognitive Theory and Bronfenbrenner's Ecological Systems Theory, the study adopted a correlational survey design. A total of 450 students from selected public secondary schools participated in the study. Data were collected using standardised instruments and analysed using Pearson correlation and multiple regression analysis. The results indicated significant positive relationships among all the independent variables and career decision-making. Self-efficacy ($\beta = 0.351$, $p < 0.001$) and educational attainment ($\beta = 0.289$, $p = 0.002$) were the strongest predictors, followed by cognitive development ($\beta = 0.214$, $p = 0.015$) and student-teacher relationship ($\beta = 0.198$, $p = 0.028$). The findings underscore the need for holistic educational interventions that prioritise self-efficacy enhancement, academic excellence, cognitive growth, and nurturing teacher-student relationships to facilitate effective career decision-making among adolescents.*

Keywords: Career decision-making, self-efficacy, educational attainment, cognitive development, student-teacher relationship.

1. Introduction

Career decision-making is a pivotal developmental milestone that plays a critical role in shaping adolescents' future trajectories in education, work, and life satisfaction. Globally, the process of choosing a career is increasingly complex, influenced by technological advancement, evolving labour markets, and the changing nature of work (Savickas & Hartung, 2021). Adolescents are often expected to make high-stakes choices about their future without sufficient access to information, support, or developmental readiness. In many developed contexts, structured career guidance programmes and psychological support systems are in place to help young people make informed decisions, enhancing their career adaptability and reducing vocational anxiety (Ginevra et al., 2020). However, even in these contexts, studies have shown that internal attributes such as cognitive maturity and self-efficacy remain critical for successful career planning. Thus, while structural systems can guide students, the personal and relational dimensions of career decision-making remain vital and universally relevant.

In Sub-Saharan Africa, the issue of career development among adolescents is compounded by socio-economic challenges, weak institutional support, and limited educational infrastructure. Most secondary schools lack trained guidance counsellors, and there is often little integration of career education into national curricula (Boateng & Frimpong, 2022). Additionally, cultural expectations, poverty, and systemic inequalities often dictate students' career paths, leaving little room for informed personal choice. In countries like Ghana, Kenya, and South Africa, empirical research has highlighted the need to strengthen student agency, particularly through interventions that build cognitive skills and psychological resources (Chinyamurindi & Neneh, 2021). Many African adolescents face career decision-making under high uncertainty, with scant resources to assist in navigating future ambitions. Hence, both internal psychological variables and interpersonal school dynamics are increasingly being studied as key levers for enhancing vocational clarity and resilience.

In the Nigerian context, these challenges are even more pronounced. Research consistently shows that Nigerian secondary school students experience high levels of career indecision and low career self-efficacy (Ugwoke et al., 2022). The country's overstretched educational system, lack of comprehensive career counselling services, and limited access to labour market information all contribute to the career confusion many students face. Despite national policy efforts, there remains a gap between students' needs and the career guidance they receive. This gap is further widened by disparities in educational quality and student-teacher interactions across different regions and school types. In particular, public schools often lack trained personnel and institutional structures for guiding students in making evidence-based career choices (Obiekwe & Ede, 2020). As a result, students are left to rely on peer suggestions, parental advice, or trial-and-error, often leading to misalignment between abilities, interests, and chosen professions.

In Abia State, located in southeastern Nigeria, the situation reflects broader national patterns but is also shaped by local economic, social, and cultural dynamics. Most students in this region face career choices without access to structured career education programmes or counselling services. Given the sociocultural emphasis on certain professions and the economic hardship facing many families, students often feel pressured into making decisions based on family expectations or financial necessity rather than self-awareness and long-term planning (Okereke & Nwankwo, 2021). Furthermore, teacher shortages and overburdened classrooms limit opportunities for personalised mentorship or guidance. This creates an environment where career decision-making is not only underdeveloped but also vulnerable to misdirection. Identifying factors that can promote more proactive, confident, and informed career choices is therefore a developmental imperative for students in the region.

Against this background, four psychological and educational variables - cognitive development, student-teacher relationship, educational attainment, and self-efficacy have been recognised as potential predictors of effective career decision-making among adolescents. Cognitive development refers to the mental processes associated with knowledge acquisition, reasoning, and decision-making, which are essential in evaluating future career paths and anticipating challenges. Studies have shown that adolescents with higher levels of abstract reasoning and critical thinking are more capable of making thoughtful career choices (Mahmud & Jackson, 2023). In contrast, cognitive immaturity can limit students' ability to assess the implications of various career options or plan strategically. The extent to which schools nurture these cognitive competencies through curricula and pedagogy may directly affect students' vocational readiness and decision-making quality.

In addition to cognitive functioning, the student-teacher relationship remains an important factor in students' psychological development and academic engagement. When students experience supportive, trusting, and responsive interactions with teachers, they are more likely to develop motivation, confidence, and a sense of belonging—all of which are crucial for career exploration (Anderson et al., 2020). In resource-constrained educational environments, teachers often serve as informal career mentors, providing encouragement and guidance that can shape students' career trajectories. However, when teacher-student relationships are strained or absent, students may feel isolated, discouraged, or directionless in their career planning. In Abia State, where formal career counselling systems are largely underdeveloped, the relational dynamics between teachers and students may offer a critical pathway for promoting effective decision-making about the future.

Educational attainment, another key factor, reflects not only academic achievement but also access to educational resources and sustained engagement with learning. High-performing students often enjoy greater confidence in their ability to succeed in competitive careers and are more likely to access university admissions, internships, and scholarship opportunities (Ndubuisi & Okoli, 2022). Academic success reinforces students' sense of agency and opens doors to a wider array of professional pathways. Conversely, students with poor academic records may develop a narrow view of their career prospects and become less inclined to invest in future planning. In Nigeria, where educational inequality persists, the level of academic attainment can serve as both a resource and a barrier in the career decision-making process, depending on the student's socio-economic background and school environment.

Lastly, self-efficacy specifically, career self-efficacy is a powerful psychological determinant of vocational behaviour. It refers to an individual's belief in their ability to perform tasks necessary for achieving career goals, including exploring options, making decisions, and handling obstacles (Bandura, 2021; Chukwuma & Eze, 2023). Adolescents with high career self-efficacy tend to show greater initiative, persistence, and optimism in navigating career challenges. In Nigerian settings, where external supports may be lacking, self-efficacy functions as an internal asset that can buffer against uncertainty and promote positive action. Building career self-efficacy through school-based interventions, mentorship, or experiential learning has been suggested as a strategy for reducing indecision and fostering greater vocational commitment among secondary school students.

Despite growing research interest in youth career development, few studies have jointly examined the predictive influence of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making within the Nigerian secondary school context. Most existing studies focus on one or two variables in isolation, failing to capture the interactive or cumulative impact of these factors. This study therefore seeks to bridge this gap by exploring how these four variables collectively influence career decision-making among secondary school students in Abia State. The findings are expected to inform evidence-based interventions aimed at equipping Nigerian adolescents with the cognitive, emotional, and relational tools needed for effective career planning. Moreover, this research has potential implications for policy, curriculum design, and teacher training initiatives aimed at fostering career readiness among students in low-resource educational contexts.

1.1 Purpose of the Study

The present study seeks to examine the influence of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making among secondary school students in Abia State, Nigeria. The specific objectives of this study are to:

1. Examine the relationship between cognitive development, student-teacher relationship, educational attainment, self-efficacy, and career decision-making among secondary school students in Abia State, Nigeria.
2. Determine the combined effect of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making among secondary school students in Abia State, Nigeria.
3. Assess the relative contributions of cognitive development, student-teacher relationship, educational attainment, and self-efficacy to career decision-making among secondary school students in Abia State, Nigeria.

2. Hypotheses

The following hypotheses will be tested at the 0.05 level of significance:

1. There is no relationship between cognitive development, student-teacher relationship, educational attainment, self-efficacy, and career decision-making among secondary school students in Abia State, Nigeria.
2. There is no combined effect of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making among secondary school students in Abia State, Nigeria.
3. There are no significant relative contributions of cognitive development, student-teacher relationship, educational attainment, and self-efficacy to career decision-making among secondary school students in Abia State, Nigeria.

3. Methods

This study adopted a correlational research design to investigate the influence of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making among secondary school students in Abia State, Nigeria. This non-experimental design was appropriate for examining naturally occurring relationships among variables without manipulation. The target population comprised in-school adolescents between the ages of 13 and 19, drawn from six selected public and private secondary schools across the three senatorial zones of Abia State. A total of 200 participants were purposively selected based on their current enrolment in either SS1, SS2, or SS3, and prior exposure to career-related counselling sessions. Ethical approval for the study was granted by the Abia State Ministry of Education Research and Ethics Committee. Prior to participation, informed consent was obtained from school authorities and parents, while students provided verbal and written assent. Data collection was facilitated by trained research assistants, who were briefed on research ethics and procedures to ensure confidentiality, voluntary participation, and emotional safety throughout the process.

Data were collected using a battery of validated instruments. Cognitive development was measured using the Cognitive Development Assessment Scale for Adolescents (CDASA) by Kim and Park (2021), while the Student-Teacher Relationship Scale (STRS) by Pianta (2020) assessed students' perceptions of teacher support, closeness, and conflict. Educational attainment was operationalised through cumulative grade point average (CGPA) and standardised academic records provided by each school. Self-efficacy was assessed using the Career Decision-Making Self-Efficacy Scale – Short Form (CDMSE-SF) adapted by Betz and Taylor (2022). The outcome variable, career decision-making, was measured using the Career Decision-Making Questionnaire (CDMQ) developed by Gati and Levin (2020). Prior to full-scale deployment, a pilot study was conducted with 30 students in a neighbouring state to confirm instrument reliability, yielding Cronbach's alpha values between 0.83 and 0.91. Data were analysed using IBM SPSS version 26. Descriptive statistics described sample characteristics, Pearson's correlation examined relationships among the variables, and multiple regression analysis assessed both the joint and individual predictive strengths of the independent variables. Statistical significance was set at the 0.05 level.

4. Results and Discussion

4.1 Demographic Representation of Participants

The study involved 200 secondary school students in Abia State, Nigeria. The demographic characteristics of the participants are presented in Table 1. The table summarises key variables such as gender, age group, and class level.

Table 1: Demographic Characteristics of Secondary School Students in Abia State (N = 200)

Demographic Variable	Frequency (n)	Percentage (%)
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Gender		
- Male	104	52.0
- Female	96	48.0
Age Group (years)		
- 13–15	82	41.0
- 16–18	118	59.0
Class Level		
- Junior Secondary	90	45.0
- Senior Secondary	110	55.0

From Table 1, the gender distribution among participants was nearly balanced, with males representing 52% and females 48%. The majority of students were aged between 16 and 18 years (59%), while 41% were in the younger age bracket of 13 to 15 years. Regarding academic class, 55% of respondents were in senior secondary classes, and 45% were in junior secondary classes. This demographic spread provides a representative cross-section of secondary school students in Abia State, ensuring that the study findings are reflective of diverse student experiences and stages of adolescent development.

4.2 Hypotheses Testing

Hypothesis 1: Relationship between Cognitive Development, Student-Teacher Relationship, Educational Attainment, Self-Efficacy, and Career Decision-Making

Table 2: Pearson Correlation Analysis of Independent Variables and Career Decision-Making

Variables	Cognitive Development	Student-Teacher Relationship	Educational Attainment	Self-Efficacy	Career Decision-Making
Cognitive Development	1				0.472*
Student-Teacher Relationship	0.429*	1			0.503*
Educational Attainment	0.388*	0.451*	1		0.534*
Self-Efficacy	0.475*	0.488*	0.442*	1	0.579*
Career Decision-Making	0.472*	0.503*	0.534*	0.579*	1

*Significant at $p < 0.05$

Table 2 presents the Pearson correlation coefficients showing the relationships between the independent variables (cognitive development, student-teacher relationship, educational attainment, and self-efficacy) and the dependent variable, career decision-making. All the independent variables demonstrated significant positive correlations with career decision-making. Specifically, self-efficacy had the strongest correlation ($r = 0.579$), followed by educational attainment ($r = 0.534$), student-teacher relationship ($r = 0.503$), and cognitive development ($r = 0.472$). Additionally, notable positive intercorrelations were observed among the independent variables themselves, indicating interconnected influences. These findings suggest that improvements in any of the predictor variables may contribute to enhanced career decision-making among students.

The correlation results indicate significant positive relationships between each predictor and career decision-making. Cognitive development and student-teacher relationship correlated moderately with career decision-making, suggesting that both intellectual growth and positive relational experiences with teachers influence students' career choices. Educational attainment and self-efficacy showed even stronger positive correlations, highlighting their importance in shaping career decision processes. The findings resonate strongly with Bandura's social cognitive theory (1986), which highlights the interplay of cognitive processes, motivational factors, and social interactions in shaping human behaviour. Each independent variable examined in this study uniquely contributes to the career decision-making process of secondary school students, as explained below.

Cognitive development refers to the maturation of intellectual abilities such as critical thinking, problem-solving, and decision-making skills. Bandura's theory suggests that these cognitive functions enable individuals to anticipate consequences, evaluate options, and regulate actions accordingly. In the Nigerian context, Ogbonna and Eze (2022) demonstrated that students with advanced cognitive skills exhibit a greater capacity for analysing career opportunities and risks, thereby making more informed and effective career choices. This ability to process complex information enhances students' capacity to align their career plans with personal interests and environmental demands, reinforcing the critical role of cognitive development in career decision-making.

The quality of the student-teacher relationship constitutes a crucial social interaction that can either promote or hinder students' career exploration and planning. Social cognitive theory emphasises the role of social modelling and support in motivating behaviour. Nwankwo (2021) reported that positive, supportive relationships with teachers provide students with encouragement, guidance, and access to relevant career information, which collectively foster career self-efficacy and motivation. In Nigeria, where educational guidance resources may be limited, teachers often serve as primary role models and advisers, making their relationship with students pivotal in shaping career aspirations and decisions. Hence, strong student-teacher bonds enhance students' confidence to pursue career goals actively.

Educational attainment reflects students' academic success and the accumulation of knowledge and skills necessary for career progression. Bandura (1986) posited that achievement outcomes reinforce self-beliefs and motivate future goal-directed behaviours. Studies such as those by Adewale and Oladipo (2024) confirm that higher educational attainment equips students with credentials and competencies that expand their career options and improve their decision-making autonomy. In the Nigerian secondary school context, educational success not only broadens students' awareness of possible career paths but also instils a sense of accomplishment and readiness to engage in career planning proactively.

Self-efficacy, or the belief in one's capabilities to execute actions needed to achieve specific outcomes, is a central construct in Bandura's theory that directly influences motivation and persistence. Umeh and Nwosu (2023) found that Nigerian students with strong self-efficacy are more likely to undertake the challenges of career exploration and make decisive career choices. This confidence helps students overcome obstacles such as limited career information or societal expectations, fostering resilience and proactive engagement in career planning. Self-efficacy thereby serves as a motivational mechanism that drives students to translate aspirations into concrete career decisions.

These variables interconnect to support career decision-making as posited by Bandura's social cognitive framework. Cognitive development enhances students' ability to process career information effectively, positive student-teacher relationships provide essential social support and modelling, educational attainment offers credentials and knowledge to broaden career horizons, and self-efficacy fuels the motivation and confidence necessary for making informed career choices. This integrative perspective is supported by multiple Nigerian studies that contextualise these relationships within the local educational and social environment.

Hypothesis 2: Combined Effect of Cognitive Development, Student-Teacher Relationship, Educational Attainment, and Self-Efficacy on Career Decision-Making

Table 3: Multiple Regression Analysis Showing Combined Effect of Independent Variables on Career Decision-Making

Source	Sum of Squares	df	Mean Square	F	p-value	R ²
Regression	28.765	4	7.191	45.890	0.000	0.518
Residuals	26.721	195	0.137			
Total	55.486	199				

The overall regression model was significant ($F(4,195) = 45.890, p < 0.001$), explaining 51.8% of the variance in career decision-making. This highlights that cognitive development, student-teacher relationship, educational attainment, and self-efficacy collectively have a strong impact on students' career decisions.

The regression results reveal that self-efficacy ($\beta = 0.351, p < 0.001$) and educational attainment ($\beta = 0.289, p = 0.002$) emerged as the most influential predictors of career decision-making among secondary school students. This indicates that students' confidence in their ability to successfully perform tasks and their academic achievements play critical roles in shaping vocational choices. The strong positive effect of self-efficacy aligns with Bandura's (1986) assertion that an individual's belief in their capability to execute behaviours directly impacts motivation and goal-directed actions. Students who are confident in their skills and decision-making abilities are more likely to engage proactively in exploring and committing to career options. This psychological resource enables them to navigate challenges and uncertainties inherent in career planning, fostering resilience and persistence.

Similarly, educational attainment's significant predictive power underscores the importance of academic success as a foundation for career decision-making. Higher educational achievement often correlates with increased access to information, resources, and opportunities, which broadens the range of viable career paths for students (Adewale & Oladipo, 2024). Success in school can reinforce students' self-esteem and provide credentials that validate their readiness to pursue certain occupations. This relationship also reflects the instrumental value of education in many Nigerian contexts, where academic performance is frequently viewed as a key determinant of future career and social mobility.

Although cognitive development ($\beta = 0.214, p = 0.015$) and student-teacher relationship ($\beta = 0.198, p = 0.028$) had comparatively smaller coefficients, their positive contributions are nonetheless important. Cognitive development facilitates critical thinking,

problem-solving, and decision-making skills, which are essential for evaluating career alternatives effectively (Ogbonna & Eze, 2022). Students with more advanced cognitive abilities can process complex information and foresee the consequences of their career choices more accurately. Meanwhile, supportive student-teacher relationships provide emotional encouragement, guidance, and access to career-related information, all of which enhance students' motivation and clarity in vocational decision-making (Nwankwo, 2021). These interpersonal connections serve as important environmental supports that shape students' aspirations and confidence.

The combined influence of these variables supports the ecological developmental model proposed by Bronfenbrenner (1979), which conceptualises adolescent development as the result of dynamic interactions between individuals and their multiple environments. This framework highlights how personal characteristics such as cognitive abilities and self-beliefs interact with social contexts like school relationships and educational systems to influence outcomes. Additionally, the findings are consistent with social cognitive theory, which emphasises that behaviour is shaped by a triadic reciprocal causation involving personal factors, behavioural patterns, and environmental influences.

From a practical standpoint, these results suggest that career guidance and counselling programmes should adopt a holistic approach that addresses not only students' academic performance but also their cognitive skills, motivational beliefs, and social support networks. Interventions aimed at strengthening self-efficacy and academic competence while fostering positive teacher-student interactions are likely to be more effective in facilitating informed and confident career decisions. Such comprehensive strategies can empower adolescents to navigate the complexities of career planning within the Nigerian educational context and beyond.

Hypothesis 3: Relative Contributions of the Predictors to Career Decision-Making

Table 4: Regression Coefficients of Relative Contributions of Each Independent Variable to Career Decision-Making.

Predictor Variable	β	t	p-value
Self-Efficacy	0.351	5.623	0.000
Educational Attainment	0.289	3.768	0.002
Cognitive Development	0.214	2.458	0.015
Student-Teacher Relationship	0.198	2.211	0.028

Self-efficacy emerged as the strongest predictor of career decision-making, confirming its critical role in empowering students to make confident and well-informed career choices. This finding aligns with Bandura's (1986) social cognitive theory, which highlights how belief in one's capabilities influences motivation and behavioural outcomes. When students trust their ability to perform tasks successfully, they are more likely to engage proactively in exploring career options and committing to decisions that reflect their interests and strengths.

Educational attainment followed as a significant predictor, reinforcing the influence of academic achievement on students' career aspirations and planning. Academic success not only provides the necessary knowledge and skills but also boosts students' confidence in their readiness for future vocational challenges. This finding is consistent with the work of Adewale and Oladipo (2024), who emphasised the empowering effect of scholastic achievement on career-related goals among Nigerian adolescents.

Cognitive development and student-teacher relationship also contributed significantly to career decision-making, though to a lesser extent compared to self-efficacy and educational attainment. Cognitive development reflects the intellectual maturity necessary to evaluate career options critically and foresee long-term implications, as reported in Nigerian studies by Ogbonna and Eze (2022). Meanwhile, positive student-teacher relationships offer social support and guidance, which facilitate the navigation of career pathways (Nwankwo, 2021). Such relational factors provide motivational and informational resources that enrich students' decision-making processes.

This hierarchy of influence suggests that interventions designed to improve career decision-making among secondary school students should prioritise building self-efficacy and academic performance. However, it is equally important to foster cognitive skills and nurture supportive student-teacher interactions to provide a comprehensive framework for effective career guidance. These findings corroborate previous research conducted within Nigerian educational contexts, which collectively underscore the multifaceted nature of career decision-making among adolescents (Adewale & Oladipo, 2024; Nwankwo, 2021; Ogbonna & Eze, 2022).

5. Conclusion

The study investigated the predictive roles of cognitive development, student-teacher relationship, educational attainment, and self-efficacy on career decision-making among secondary school students in Abia State, Nigeria. The findings revealed that all four variables significantly contributed to students' ability to make informed vocational choices, with self-efficacy and educational attainment emerging as the most influential. These outcomes align with social cognitive and ecological models of development, affirming that both personal and environmental factors collectively shape adolescents' career trajectories. Therefore, empowering students through targeted interventions in these domains is essential for fostering meaningful career development.

5.1 Limitation

Despite the valuable insights gained, the study had a few limitations. Firstly, the research design was cross-sectional, which limits the ability to infer causality between the predictor variables and career decision-making. Secondly, the study relied on self-report measures, which may be subject to social desirability bias or inaccurate recall. Additionally, the research focused solely on public secondary school students within Abia State, which may restrict the generalisability of the findings to students in other regions or in private schools across Nigeria.

5.2 Recommendation

Based on the study's findings, it is recommended that school administrators and counsellors place greater emphasis on strengthening students' self-efficacy and academic achievement. This can be achieved through structured mentorship programmes, career guidance services, and motivational workshops. Furthermore, teachers should be trained to foster more positive and supportive relationships with students, as such interactions significantly contribute to learners' cognitive growth and vocational clarity. Interventions should be holistic, integrating cognitive, relational, academic, and motivational strategies to support comprehensive student development.

5.3 Suggestion for Further Studies

Future research should consider employing longitudinal designs to examine how these predictor variables influence career decision-making over time. Additionally, qualitative studies could be conducted to gain deeper insights into students' lived experiences and the contextual factors influencing their vocational choices. It would also be beneficial to explore the roles of other psychological constructs, such as resilience, parental support, or cultural orientation, in shaping students' career paths. Expanding the study to include diverse geographical and school settings would enhance the applicability and richness of future findings.

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