

# Birth Order and Academic Motivation of Secondary School Students in Lagos, Nigeria.

Elegbeleye, A. O.<sup>1</sup>, Idada, O.<sup>2</sup>, & Ipinmoye, J. M.<sup>3</sup>

<sup>1</sup>Department of Psychology, Nile University of Nigeria, Abuja, FCT, Nigeria

<sup>2,3</sup>Department of Psychology, Covenant University, Ota, Ogun State, Nigeria

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## ABSTRACT

The study examined birth order in relation to academic motivation among secondary school students in Lagos. Utilizing a cross-sectional survey design, data was collected from 430 students (mean=15.46, SD=1.53) across public and private schools. The Academic Motivation Scale (AMS-HS 28) was employed to measure motivation levels. Descriptive statistics revealed that nearly half of the students (45.6%) exhibited low levels of academic motivation. One-way ANOVA results indicated significant differences in academic motivation across birth order categories ( $F(3,426) = 4.66, p < .01$ ). Post hoc analyses showed that lastborn children reported higher academic motivation than middle children, and firstborn children displayed higher motivation compared to middle and only children. These findings challenge traditional birth order theories, suggesting that lastborn children's motivation may be influenced by their older siblings' achievements. Additionally, firstborn children showed higher motivation, likely due to greater parental expectations, while only children exhibited the lowest motivation levels, potentially due to a lack of sibling competition. This research contributes to the understanding of academic motivation determinants and offers insights for educational and parental strategies to enhance student motivation.

**Keywords:** Birth Order, Academic Motivation

## INTRODUCTION

With the pressures associated with schooling in Nigeria, what keeps students engaged in attaining personal, familial, and societal expectations? According to the Lagos State School Census report from 2014 to 2015, over 57,000 thousand students in public secondary schools repeated (Ministry of Education, 2015). Repetition of a class negatively impacts students as they tend to have a less positive attitude towards school compared to their counterparts (Ikeda & García, 2014). As such, it is imperative to investigate factors that influence the academic performance of Lagos State secondary school students.

One of the factors that influence the performance of secondary students is academic motivation. Low academic motivation is a precursor to poor academic performance (Scheel et al., 2009). Motivation is needed to complete an action (Mahato & Barman, 2019) and determines their direction, intensity, and determination (Koyuncuoglu, 2021). Hence, it is a force in achievement (Akpan, & Umobong, 2013). Academic motivation, a student's drive to learn and participate in other school activities (Hulleman et al., 2016) is the "key to persistence and to learning that lasts" (Chickering & Kuh, 2005). Motivation is of utmost importance in every area of life and has been implicated in areas such as academic performance (Koyuncuoglu, 2021; Oyekola et al., 2020; Dramanu & Mohammed, 2018; Akomolafe et al., 2013; Goodman et al., 2011), academic engagement (Akpan, & Umobong, 2013), career decisions (Koyuncuoglu, 2021), and time management (Ghiasvand et al., 2016). Conversely, low levels of motivation can lead to disengagement from school, underachievement and ultimately dropout (Scheel et al., 2009). Thus, studying

motivation and factors that influence it is crucial in the academic sphere.

Academic achievement is influenced by learning processes – i.e., academic motivation and contexts – i.e., social support (Scheel et al., 2009). In this regard, familial relationships play a crucial role in nurturing academic motivation – students with siblings who were successful in school become more motivated (Scheel et al., 2009). Hence, an individual's family position, particularly having siblings ahead in the family structure, has the potential to influence academic motivation. Through social learning and modelling of behaviour, firstborn children influence middle and lastborn children. While the relationship between birth order and various aspects of personality and behaviour has been extensively explored over the years, recent studies have emerged that dispute such relationship (Damian & Roberts, 2015; Rohrer et al., 2015). Nevertheless, birth order remains an area of considerable interest, given its purported effects on children's outcome such as intelligence (Barclay, 2015; Black et al., 2011) and career preference (Akpakip, 2019). Birth order has also been linked to academic performance in Nigeria (Elemile & Owolabi, 2015; Faniyi, 2014; Ositoye et al., 2010). However, there exists a paucity of research in Nigeria to ascertain the role birth order might play in academic motivation.

Birth order, the position or rank of an individual among siblings (Ositoye et al., 2010), is commonly classified into four categories: first born, middle, last born and only child. Empirical evidence suggests that firstborn children achieve more (Bonesrønning, & Sandgren-Massih, 2011) and score higher on measures of intelligence and self-reported intellect (Rohrer et al., 2015) compared to their younger siblings. These differences, according to the resource dilution theory of birth order, result from the finite nature of the resources (i.e., time and money) parents require to care for their children; with the passage of time and an increase in the number of children (Downey, 2001).

Studies examining the effect of birth order on motivation have yielded mixed results. Combs-Draughn (2016), studied the impact of birth order on scholastic achievement and motivation in a sample of 183 students and found that birth order predicted student motivation in only a subscale of the BIS/BAS motivation scale – the area of reward and responsiveness. However, Tripathy (2017) examined the effect of birth order on achievement motivation among 90 adolescents in India using the Rao achievement motivation test but found no significant difference in academic motivation across the four birth order categories.

While birth order theories have traversed through decades of discourse with mixed results, the question of whether and how birth order shapes academic motivation remains a pertinent and complex area of investigation. Understanding learning processes in particular, academic motivation and contexts offers directions for the design and implementation of programs to aid the academic performance of students. Therefore, the purpose of this study is to investigate the role birth order plays in the academic motivation of secondary school students in Lagos, Nigeria.

### **Research Question**

What is the prevalent level of academic motivation among Lagos State secondary school students?

### **Hypothesis**

There will be no significant difference in academic motivation across birth order categories.

## **METHODS**

### **Design**

A cross-sectional survey design was utilized for its efficiency in collecting data from three local

governments in Lagos, Nigeria.

## Participants

The study sample comprised 430 secondary school students (224 males, 206 females) from both public (60.7%) and private (39.3%) secondary schools in Lagos. Sampling was conducted using a two-stage procedure. Firstly, one local government was randomly selected from each of the three senatorial districts in Lagos using balloting method. The local government areas were Agege, Surulere, and Ibeju-Lekki. Subsequently, convenience sampling techniques were employed to select schools within the chosen local governments.

## Instrument

The Academic Motivation Scale (AMS-HS 28), adapted from the college version developed by Vallerand, Pelletier, Blais, and Brière (1992), was used to assess students' academic motivation. This scale consists of 28 items measuring seven subscales: intrinsic motivation towards knowledge, accomplishments, and stimulation; external motivation; introjected and identified regulation; and amotivation. Responses were provided on a 5-point Likert scale ranging from "does not correspond at all" to "corresponds exactly." Reverse scoring was applied to specific items, and content validity was established by expert judgment.

Instrument	No. of Items	Cronbach's Alpha	Test-retest
AMS-HS 28	28	0.81	0.79

## Procedure

Ethical approval was obtained from relevant authorities prior to data collection. Participants were briefed about the study objectives and procedures; informed of their right to withdraw participation at any time; and informed consent was obtained. Questionnaires were administered in classroom settings during designated periods, ensuring confidentiality and anonymity of responses. Participants were instructed to truthfully respond. Data collection occurred over a specified period to minimize external influences.

## Data Analysis

Data preparation involved screening for missing values and outliers. Normality and homogeneity of variance assumptions were assessed to ensure suitability for analysis of variance (ANOVA) and regression analysis. Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 26. To characterize the sample, descriptive statistics was employed, while inferential statistics, such as ANOVA, was utilized to examine differences in academic motivation across birth order categories.

# RESULTS

## Descriptive Statistics

Table 1 Descriptive Statistics of Sample Characteristics

Variables	Response category	N	%	Mean	SD
Sex	Male	224	52.1		
	Female	206	47.9		
Birth order	First child	143	33.3		
	Middle child	178	41.4		

	Last child	91	21.2		
	Only Child	18	4.2		
Age	10 – 12 years	8	1.9		
	13 – 15 years	208	48.4		
	16 – 18 years	208	48.4	15.46	1.53
	19 – 20 years	6	1.4		
School Type	Private	169	39.3		
	Public	261	60.7		

Table 1 depicts the characteristics of the sample population. There were more males (52.1%) than females (47.9%) and most participants (48.4%) fell within the age range of 13 to 15 years, with a mean age of 15.46 years ( $SD = 1.53$ ). In terms of school type, 60.7% attended public secondary schools, while 39.3% attended private secondary schools. Regarding birth order, 33.3% were firstborn children, 41.4% were middle children, 21.2% were last children, and 4.2% were only children.

### Research question 1

What is the prevalent level of academic motivation among Lagos State secondary school students?

Table 2 Incident rates of academic motivation among Lagos State secondary school students ( $n=430$ )

	Mean	SD	N	%
Low	91.78	9.41	196	45.6%
Moderate	113.17	4.37	160	37.2%
High	128.00	4.34	74	17.2%
Total	105.97	15.67	430	100.0%

Table 2 presents the incident rates of academic motivation among participants and shows that low level academic motivation is most prevalent among Lagos State secondary school students (45.6%), followed by moderate level (37.2%) and high level (17.2%) respectively.

### Hypothesis Testing

#### Hypothesis 1

There will be no significant difference in academic motivation across birth order categories.

Table 3 One-way ANOVA showing the difference in academic motivation among birth order categories.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3289.299	3	1096.433	4.662	.003
Within Groups	99950.006	426	235.176		
Total	103239.305	429			

The result presented in Table 3 indicates a significant difference in academic motivation across birth order categories  $\{F_{(3,426)} = 4.662, p < .01\}$ . Further analysis was conducted to explore the specific differences in academic motivation among first, middle, last, and only children, as depicted in Table 4.

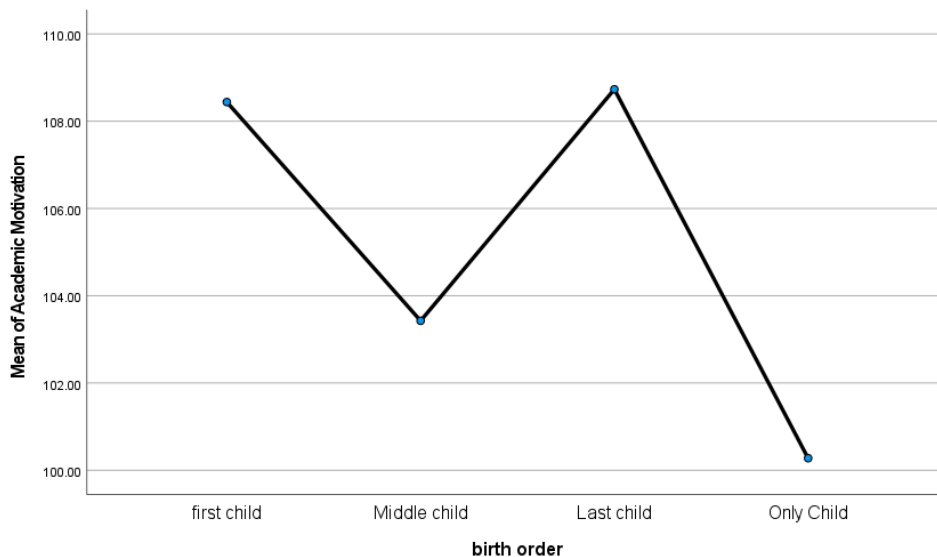
Table 4 Summary of descriptive and LSD post hoc analysis showing the differences in academic motivation among birth order categories.

	N	Mean	SD	LSD Post hoc test			
				1	2	3	4
first child	143	108.4	15.02	—	5.01*	-.292	8.16*
Middle child	178	103.4	15.69		—	5.30*	3.149
Last child	91	108.7	14.48			—	8.45*
Only Child	18	100.3	18.23				—
Total	430	106.1	15.53				
P < .05							

The post hoc test shows several significant differences in academic motivation across different birth order categories. Lastborn children (M = 108.7) reported higher academic motivation than middle children (M = 103.79), (LSD = 5.30, p < .05); there was a significant difference in academic motivation between firstborn children (M = 108.4) and middle children (M = 103.4), (LSD = 5.01, p < .05); firstborn children (M = 108.4) exhibited a significant difference in academic motivation compared to only children (M = 100.3), (LSD = 8.16, p < .05); and the academic motivation of lastborn children (M = 108.7) significantly differed from that of only children (M = 100.3), (LSD = 8.45, p < .05).

Based on these findings, there is a significant difference in academic motivation across different birth order categories among secondary school students in Lagos, Nigeria. Therefore, the null hypothesis is rejected.

Figure 1 Line graph showing the mean academic motivation scores based on birth order.



The line graph illustrates the mean academic motivation scores based on birth order.

## SUMMARY OF FINDINGS

Nearly half of the participants (46%) had low levels of academic motivation. In addition, there was a significant difference in academic motivation across birth order categories. Specifically, lastborn children exhibited higher academic motivation compared to middle children, while firstborn children demonstrated

significantly higher motivation compared to both middle and only children. Furthermore, lastborn children reported higher academic motivation than only children.

## DISCUSSION OF FINDINGS

The findings provide insight on the interplay between birth order and academic motivation among secondary school students in Lagos, Nigeria. The prevalence of low levels of academic motivation among the sampled students underscores the importance of understanding the factors that influence motivation in educational settings. Contrary to the null hypothesis, the analysis revealed a significant difference in academic motivation across birth order categories, suggesting that birth order indeed plays a role in students' motivation levels.

One notable finding is the higher academic motivation observed among lastborn children compared to middle children. This contradicts traditional birth order theories, such as Alfred Adler's theory, which posits that lastborn children may lack motivation due to feelings of inferiority or being pampered by parents. Instead, results from this study suggest that lastborn children may be motivated by the achievements of their older siblings, striving to emulate their success. However, it supports the findings of Combs-Draughn (2016), which found lastborn children had higher academic motivation among other birth order categories.

Similarly, the higher academic motivation observed among firstborn children aligns with previous research indicating that firstborn children often exhibit greater ambition and drive to succeed. The heightened expectations placed on firstborn children may fuel their motivation to excel academically, as they strive to meet or exceed these expectations. Middle children, on the other hand, may face unique challenges stemming from their position between older and younger siblings. Competing for attention and resources within the family dynamic may contribute to feelings of inadequacy or a lack of motivation, as suggested by Alfred Adler's birth order theory.

Furthermore, the lower academic motivation observed among only children may be attributed to factors such as parental overindulgence or a lack of sibling competition. Without siblings to serve as role models or rivals, only children may not experience the same motivational pressures as those with siblings. Consequently, they may exhibit lower levels of academic motivation. This finding is supported by Combs-Draughn (2016) study, which reported lower scores among only children in comparison other birth order categories.

## LIMITATIONS

While this study provides valuable insights into the relationship between birth order and academic motivation among secondary school students in Lagos, Nigeria, several limitations should be acknowledged:

1. Birth order was categorized into four groups (first, middle, last, and only children) based on self-reported information from participants. However, birth order dynamics within families can be complex, and other factors such as age spacing between siblings and sibling relationships may also influence motivational patterns.
2. While the study utilized a validated academic motivation scale, it assessed motivation broadly but did not examine specific motivational factors or domains in-depth. In addition, the method of self-measures has numerous limitations like response distortion.

## CONCLUSION AND RECOMMENDATION

The study investigated the effect of birth order on academic motivation. The results of this study showed the



prevalence of low academic motivation among secondary school students in Lagos, Nigeria. Furthermore, the level of academic motivation differed significantly among birth order categories. These findings contribute valuable insights into understanding the role of family dynamics in shaping students' motivational patterns, emphasizing the importance of tailored support and intervention strategies. However, considering the limitations of the study, further research is required.

Educators, parents, and counsellors need to recognize and address the individual motivational needs of students based on their birth order, fostering a supportive learning environment conducive to academic success. Findings of this study underscore the significance of considering birth order as a potential factor in understanding and enhancing students' academic motivation, paving the way for future research and interventions.

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