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PERCEIVED TEACHER-RELATED FACTORS INFLUENCING STUDENTS' ACADEMIC PERFORMANCE IN CHEMISTRY IN AGUATA EDUCATION ZONE OF ANAMBRA STATE

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Abstract

Teacher-related variables refer to the personal and professional characteristics of teachers that can influence students' learning outcomes and overall academic achievement. This study examined perceived teacher-related factors influencing students' academic performance in chemistry in the Aguata Education Zone of Anambra State. Four research questions were answered and four null hypotheses tested. The study adopted a descriptive survey design. A sample of 422 teachers (196 males and 226 females) was drawn from a population of 7244 using stratified proportionate random sampling. Data were collected using a 28-item researcher-developed questionnaire titled Teacher Factor on Student's Academic Performance Questionnaire (TFSAPQ). The instrument was subjected to trial testing, and its reliability, established through the test-retest method with Pearson Product-Moment Correlation, yielded a coefficient of 0.87. Three experts ensured face validity of the instrument. Data analysis involved the use of mean and standard deviation to address the research questions. At the same time, t-test statistics were employed to test the null hypotheses at a 0.05 level of significance. Findings indicated that teaching experience, academic qualifications, teaching methodology, and family size significantly affect students' performance in Chemistry. Furthermore, teachers' application of various teaching strategies also influenced students' academic achievement. It was therefore recommended that teachers lacking adequate professional qualifications and teaching experience should not be assigned to teach Chemistry in secondary schools.

Keywords: Perceived, Teacher-Related, Factors, Influence, Students, Academic Performance, Chemistry

1.1 Introduction

Education, skill acquisition, and continuous learning are vital elements that shape the work performance of trained professionals who teach school subjects such as Chemistry. A profession such as teaching is generally linked with activities of high status that demand specialized training. Teaching as a profession requires the cultivation of knowledge, skills, and attitudes over an extended period of study and training, leading to certification that is formally recognized by members of the profession, authorizing one to practice. According to Fatai et al. (2021), teaching involves guiding and supporting students' learning through the teacher's effective management of the interplay between learners' interests, instructional methods, content, and teaching resources. A

teacher is therefore regarded as a professional equipped to manage the teaching-learning process competently. Such a person possesses the intellectual ability to understand child development, learning psychology, and the administration of educational systems. Since teachers interact directly with learners, their roles have a significant influence on the society they serve. In this context, the teacher helps students internalize knowledge and concepts necessary for developing science skills, thereby enabling them to maximize their potential (Umar, Rashid & Asimiran, 2019).

The bedrock of the educational system lies on a core of devoted, knowledgeable, competent, and well-trained teachers. Teachers are at the center of all teaching and learning processes in academic environments, as they are responsible for transmitting knowledge, ideas, and skills to learners. They are the hub of the global educational system. A teacher is a person who helps students acquire knowledge, skills, and values to bring about desirable change in the learner's behaviour. Teachers can be categorized based on the area of specialization, such as Chemistry teachers. A Chemistry teacher is an individual trained in both the pedagogical and subject-specific aspects of Chemistry, tasked with imparting knowledge, skills, and attitudes to students (Hillary & Akor, 2019). A Chemistry teacher is a professional responsible for instructing students in formal schools or institutions, enabling them to learn about Chemistry. A Chemistry teacher is responsible for a variety of tasks, including planning school instruction, organizing instructional resources, implementing instruction, evaluating instruction, managing Chemistry practicals, maintaining student-teacher relationships, maintaining teacher-community relationships, and guiding students' career or occupational choices through well-designed lessons. The phrase "effective teaching" has various connotations. It reflects the interests and opinions of a diverse range of authors, academics, and officials (Fatai et al., 2021). Academic competence, classroom practice, and bringing value to students' academic success are all factors that many people consider essential for effective teaching. These factors include, but are not limited to, teaching experience, academic qualification, teaching methodology, and family size.

Teaching experience refers to the teacher's exposure and knowledge acquired over time in the teaching profession. Adeyemi (2023) asserted that experience is characterized by the number of years spent or knowledge gathered in the teaching profession. An experienced teacher considers the nature of the students to be taught, the topic, the school environment, and the teaching facilities to be used before adopting a particular teaching method. Teaching experience emanates from the number of years spent and the challenges faced during the period. Experienced teachers can be regarded as "teaching veterans or master teachers" who can provide stability to schools and serve as mentors to new teachers, often referred to as "the beginning teachers". Bamigbade, Amoo, Oluwadare and Adedokun (2021) found in their study that teachers' academic qualifications, gender, and teaching experience are correlated with students' academic performance in Biology in Oyo State, Nigeria. The study found a significant influence of teachers' gender on students' learning outcomes. Apart from the teacher's wealth of experience, the effectiveness and productivity of teachers decline as they age. Additionally, the academic qualifications of the teacher may also influence the learning outcomes of the learners.

Academic qualification refers to certifications awarded to students upon the successful completion of an education program, such as the National Certificate in Education (NCE), Bachelor's in Education (B.Ed.), Bachelor's in Science Education (B.Sc. (Ed)), MSc, and PhD, among others. This makes teaching and learning more effective, as teachers can draw on the wealth

of knowledge and experience they possess. The relevant academic qualifications of teachers have been a primary concern for educational stakeholders, including the government. This contributed to why some teachers strive to acquire in-service academic and professional qualifications that can make them more relevant in teaching, for promotion, or as a means of self-improvement.

Teaching methodology can be viewed as a set of principles or strategies employed by teachers to facilitate effective teaching and learning. This is an essential predictor of students' learning outcomes. For teachers to be effective, there is a need to be conversant with modern teaching methods, the use of Information and Communication Technology (ICT), and instructional resources that recognize the complexity of the concepts to be covered (Ogunjobi & Idowu, 2024). Teaching can be done using different methods depending on the topic, learning environment, and students' nature, but some teachers are found not to put this into cognizance. Hence, the students' learning outcome might be negatively influenced. Agricultural science, as a practical-oriented subject, requires appropriate teaching methods such as demonstrations, discussions, projects, and field trips, among others (Aina, 2018; Ogunjobi, Adedara & Ogunleye, 2021). Adunola (2018) remarked that the method of teaching is as important as the subject being taught. Whether a student will understand what is being taught is partly a function of the method adopted by the teacher in delivering the lesson and the teacher's teaching experience. However, the teaching methodologies used by male teachers appear to be higher than those used by females. This may be a result of a gender misconception (Casian, Mugo, & Claire, 2021; and Ibrahim, 2020). Apart from teachers' wealth of experience, the effectiveness and productivity of teachers, as well as students' academic performance, can be influenced by the size of their families.

Family size refers to the total number of individuals who comprise a household, typically including parents, children, and sometimes extended relatives who live together. It is a crucial demographic variable in social and educational research, as it influences the resources, attention, and support available within a family (Adaramaja et al., 2024). Furthermore, the size of a teacher's family can be shaped by cultural practices, economic conditions, religious beliefs, and parental preferences. Studies have shown that family size has implications for children's education, health, and overall development. For instance, smaller families may provide more financial and emotional resources per child.

In comparison, larger families may foster stronger socialization and support networks, though resources may be stretched (Ogunjobi & Idowu, 2024). Hence, the issue of family size may affect students' learning outcomes in Chemistry in secondary schools. These teacher factors together promote greater academic performance of students in Chemistry.

Academic performance is crucial as it provides insight into students' success in learning within a specific period. In Nigeria, the West African Senior School Certificate Examinations (WASSCE) conducted by the West African Examinations Council (WAEC) assesses senior secondary school students before they complete their three-year program. However, poor academic performance in this examination has been a concern. Factors such as parents' inability to fulfill their roles, including paying school fees, providing necessary materials, and supervising their children's academic work, can contribute to this. Active parental support for children's education is crucial for their academic success. Other factors contributing to poor academic performance include incomplete syllabi coverage, teachers' lack of interest in students' understanding, absenteeism, poor teacher-student relationships, lateness, and inadequate student reinforcement (Adaramaja et al., 2024). Academic performance is essential because it serves as the channel

through which parents, students, teachers, the government, and members of the public are informed about the level of success students have achieved in learning within a specified period. In Nigeria, the West African Senior School Certificate Examinations (WASSCE) conducted by the West African Examinations Council (WAEC) assesses senior secondary school students before they complete their three-year program. However, poor academic performance in this examination has been a concern. According to Worlu and Puyate (2022), factors such as parents' inability to fulfill their roles, including paying school fees and other levies on time, providing textbooks and writing materials, and supervising their children's academic work, can contribute to poor academic performance. Oyedare, Ogunjinmi, and Durojaiye (2016) maintained that the extent to which parents actively support their children's education is a significant determining factor in their academic performance.

However, no previous studies have focused on perceived teacher factors influencing students' academic performance in agricultural science in the Umuahia Education Zone of Anambra State. This study aims to fill this gap by examining the perceived teacher factors that influence students' academic performance in agricultural science within the Umuahia Education Zone of Anambra State, considering differences based on teaching experience, academic qualifications, teaching methodologies, and family size.

1.2 Statement of the Problem

The teaching of Chemistry in Nigerian secondary schools, particularly in the Aguata Education Zone of Anambra State, has continued to face challenges as evidenced by the persistent poor performance of students in both internal and external examinations. Despite the importance of Chemistry as a core science subject and a prerequisite for careers in medicine, engineering, pharmacy, and other scientific fields, many students struggle to achieve satisfactory outcomes. Several factors have been suggested to account for this situation, among which teacher-related variables appear most critical. Teachers play a central role in facilitating effective learning; however, their academic qualifications, years of teaching experience, instructional methods, and even personal factors, such as family size, may influence the extent to which they deliver quality instruction and engage learners meaningfully. When teachers lack appropriate qualifications or employ ineffective instructional methods, students' understanding and interest in Chemistry may be adversely affected. Similarly, teachers with limited experience may find it challenging to manage the subject's abstract concepts, while enormous family responsibilities may interfere with their commitment to teaching. In the Aguata Education Zone, the persistent low achievement of students in Chemistry raises concerns about the extent to which these teacher-related factors contribute to the problem. If these issues are not empirically examined and addressed, the continued decline in performance could discourage students from pursuing science-related careers, thereby undermining national efforts toward scientific and technological development. It is against this backdrop that the researchers examined perceived teacher-related factors influencing students' academic performance in Chemistry in the Aguata Education Zone of Anambra State.

1.3 Research Questions

The following research questions were answered

1. What is the perceived teaching experience of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?

2. What is the perceived academic qualification of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?
3. How does the perceived teaching methodology used by teachers influence students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?
4. How does teachers' family size influence students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?

1.4 Hypotheses

The following null hypotheses were tested at the 0.05 level of significance.

1. There is no significant difference in the perceived teaching experience of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State.
2. There is no significant difference in the perceived academic qualification of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State.
3. There is no significant difference in the perceived teaching methodology used by teachers in influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State.
4. How teachers' family size influence students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State do not differ significantly.

2. Materials and Methods

The study adopted a descriptive survey design. A sample of 422 teachers (196 males and 226 females) was drawn from a population of 7,244 using stratified proportionate random sampling. Data were collected using a 28-item researcher-developed questionnaire titled Teacher Factor on Student's Academic Performance Questionnaire (TFSAPQ). The instrument underwent trial testing, and its reliability, established through the test-retest method using Pearson's Product Moment Correlation, yielded a coefficient of 0.87. Three experts ensured face validity. Data analysis involved the use of mean and standard deviation to address the research questions. At the same time, t-test statistics were employed to test the null hypotheses at a 0.05 level of significance.

3. Results

Research Question 1: What is the perceived teaching experience of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?

Table 1: Mean Responses on the Perceived Influence of Teachers' Teaching Experience on Students Academic Performance in Chemistry

S/N	ITEM STATEMENT	$\bar{X}$	SD	Remarks
1.	Teachers' experience on subject matter helps in enhancing academic performance.	3.16	1.33	Agreed

2.	Experienced agriculture science teacher often obtains their set objectives for his/her lesson which leads to increase in academic performance.	2.63	0.81	Agreed
3.	The length of teaching experience of the agricultural science leads to high academic performance of student.	3.04	1.27	Agreed
4.	Teachers that have long years of experience cannot teach better than the newly recruited teachers.	2.35	0.65	Disagreed
5.	The academic performance of agricultural science students is enhancing by the number of year that the teachers spent in teaching.	3.14	1.39	Agreed
6.	Teachers' experience does not have influence on student academic performance in agricultural science.	2.09	0.59	Disagreed
7.	Topic taught by inexperienced teacher cannot be comprehended by the students in agricultural science.	2.75	0.76	Agreed
8.	Experience makes teachers understand objectives of topic in the curriculum for better academic performance of students.	2.61	0.77	Agreed
	Pooled Mean	**2.72**	**0.95**	**Agreed**

Table 1 indicates that the mean scores for all items, except items 11 and 13, were above the benchmark value of 2.50, signifying respondents' agreement with those statements. The table further reveals that respondents acknowledged teaching experience as a factor that enhances students' academic performance. However, the mean scores for items 11 and 13, which fell below the 2.50 benchmark, show that respondents disagreed with the notion that teachers' work experience has no effect on students' performance. The overall pooled mean of 2.72, which is above the benchmark, confirms that respondents agreed that teachers' teaching experience positively influences students' academic achievement in Chemistry.

Hypothesis 1: There is no significant difference in the perceived teaching experience of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State.

Table 2: t-test Analysis of Teachers Mean Responses on Influence of Teachers' Teaching Experience on Students' Academic Performance in Chemistry

Teachers	N	$\bar{X}$	SD	df	t-cal	p-value	Remarks
1-10	145	13.41	1.93				
				420	-2.43	0.02	Sig.
11-Above	277	12.93	1.86				

Table 2 presents the data with a calculated t-value of -2.43 and a significance p-value of 0.02. Since the p-value is less than the 0.05 level of significance, the null hypothesis of no significant difference was rejected. This implies that there is a significant difference between the mean responses of teachers regarding the perceived influence of teachers' teaching experience on students' academic performance in Chemistry.

Research Question 2: What is the perceived academic qualification of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?

Table 3: Mean Responses on the Perceived Influence of Teachers' Academic Qualification on Students Academic Performance in Chemistry

SN	ITEM STATEMENT	$\bar{X}$	SD	Remarks
9.	Qualified teachers communicate effectively in the class which leads to academic performance.	3.02	1.14	Agreed
10.	Qualified teachers can improvise teaching materials in order to improve students' academic performance.	2.93	0.89	Agreed
11.	Qualified teachers' masters the content that are being taught to students which lead to students academic performance.	3.11	1.18	Agreed
12.	Qualified use better teaching method which leads to higher academic performance.	3.09	1.20	Agreed
13.	Qualified teachers can understand students' problems earlier in the increase their academic performance.	2.88	0.81	Agreed
14.	Qualified teachers do not lack academic methodology in teaching agricultural science which leads to students' poor academic performance.	2.73	0.74	Agreed
15.	Qualification enables teachers to state objectives of the lesson correctly for better academic performance.	2.66	0.69	Agreed
	Pooled Mean	**2.92**	**0.95**	**Agreed**

Data in Table 3 reveals that the mean scores for all the items exceeded the benchmark value of 2.50, indicating that respondents agreed with every statement presented. In particular, they acknowledged that qualified teachers are able to communicate effectively, make better use of instructional materials, and demonstrate mastery of subject content, all of which enhance students' academic performance. The overall pooled mean of 2.92, which is also above the 2.50 benchmark, further confirms that respondents agreed that teacher qualification has a significant influence on students' achievement in Chemistry.

Hypothesis 2: There is no significant difference in the perceived academic qualification of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State.

Table 4: t-test Analysis of Teachers Mean Responses on Influence of Teachers' Academic Qualification on Students' Academic Performance in Chemistry

Teachers	N	$\bar{X}$	SD	df	t-cal	p-value	Remarks
Qualified	307	11.49	1.83				
				420	1.13	-0.95	Sig.
Unqualified	115	12.03	1.55				

Table 4 shows a calculated t-value of 1.13 with a significance p-value of -0.95. Since the p-value is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that there is a significant difference between the mean responses of qualified and unqualified teachers concerning the perceived influence of teachers' academic qualification on students' academic performance in Chemistry.

Research Question 3: How do the perceived teaching methodology used by teachers influence students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?

Table 5: Mean Responses on the Perceived Influence of Teachers' Use of Teaching Method on Students Academic Performance in Chemistry

S/N	ITEM STATEMENT	$\bar{X}$	SD	Remarks
16.	When the teachers' method of teaching only appeals to the sense of hearing there will be low academic performance.	3.39	0.61	Disagreed
17.	The teachers' use of method that ensures the participants of every member of the class leads to higher academic performance.	2.86	0.85	Agreed
18.	The teachers' talk-chalk method of teaching agricultural science enables quick coverage of syllabus but discourages effective learning.	2.71	0.73	Agreed
19.	Teacher centered method of teaching contributes to low academic performance of agricultural science students.	3.17	1.05	Agreed
20	The teacher teaching agricultural science outside the classroom environment can help improve teaching and learning.	3.33	1.41	Agreed
21.	The teachers' teaching methods that solicit critical and logical thinking among students tend to improve level of academic performance of students in agricultural science.	3.12	1.16	Agreed
22.	When teachers indulge in talking and explaining points while learners listens and jot some points leads to students' high academic performance.	2.88	0.83	Agreed
	Pooled Mean	**3.07**	**0.95**	**Agreed**

The results in Table 5 indicate that the mean scores for all items ranged from 2.86 to 3.39, all of which are above the benchmark value of 2.50. This suggests that respondents agreed with the statements presented. The pooled mean of 3.07, also higher than the benchmark, further confirms that respondents acknowledged that teachers' use of instructional methods influences students' academic performance in Chemistry.

Hypothesis 3: There is no significant difference in the perceived teaching methodology of teachers influencing students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State.

Table 6: t-test Analysis of Teachers Mean Responses on Influence of Teaching Methodology on Students' Academic Performance in Chemistry

Teachers	N	$\bar{X}$	SD	df	t-cal	p-value	Remarks
Teacher-centered methods	99	14.33	1.59				
				420	-2.44	0.01	NS
Student-centered method	323	14.09	1.63				

Table 6 presents a calculated t-value of -2.44 and a significance p-value of 0.01. Since the p-value is less than the 0.05 level of significance, the null hypothesis of no significant difference was rejected. This means that a significant difference exists between the mean responses of teachers regarding the perceived influence of teachers' use of teaching methods on students' academic performance in Chemistry.

Research Question 4: How does teachers' family size influence students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State?

Table 7: Mean Responses on the Perceived Influence of Teachers' Family Size on Students Academic Performance in Chemistry

S/N	ITEM STATEMENT	$\bar{X}$	SD	Rmrks
23.	Teachers' from small-size families achieve better academically than those from large size families.	2.74	0.65	Agreed
24.	The family size of teachers can help improve the reading habit and academic performance of agricultural science students	2.91	0.70	Agreed
25.	Teachers' from small size families enjoy more family attention than those from large size families.	2.83	0.66	Agreed
26.	Teacher family size contributes to low academic performance of agricultural science students.	2.55	0.49	Agreed
27	Teachers' small size families facilitate the provision of recommended textbooks and equipments for effective learning.	2.98	0.74	Agreed
28.	Teachers' from small size families enjoy teaching more than those from large size families.	2.72	0.61	Agreed
	Pooled Mean	**2.79**	**0.64**	**Agreed**

The findings in Table 7 reveal that the mean responses for all the items (23-28) ranged from 2.55 to 2.98, which were above the benchmark mean of 2.50. This indicates that the respondents agreed with all the statements. The overall pooled mean of 2.79, also higher than the benchmark of 2.50, further confirms that the respondents agreed that teachers' family size has an influence on students' academic performance in Chemistry.

Hypothesis 4: How teachers' gender influence students' academic performance in Chemistry in secondary schools in Aguata Education Zone of Anambra State do not differ significantly.

Table 8: t-test Analysis of Teachers Mean Responses on Influence of Teaching Methodology on Students' Academic Performance in Chemistry

Teachers	N	$\bar{X}$	SD	df	t-cal	p-value	Remarks
Small Size	127	10.35	1.39				
				420	1.22	0.51	NS
Large Size	295	10.86	1.60				

Table 8 shows the t-calculated value of 1.22 and significant p-value of 0.51. Since the p-value of 0.51 is greater than 0.05 level of significance, the null hypothesis was accepted. Therefore, there is a significant difference between the mean responses of teachers on the perceived influence of teachers' family size on the students' academic performance in Chemistry.

4. Discussion

Findings from research question 1 revealed that the respondents agreed that teachers' teaching experience positively influences students' academic achievement in Chemistry in Anambra State. This finding aligns with the results of Adaramaja et al. (2024), who revealed that teacher factors significantly influence students' academic performance in the West African Examination Council (WAEC) in Osun State. Furthermore, hypothesis 1 showed a significant difference in the teachers' responses regarding the influence of teaching experience on academic performance in Chemistry in Anambra State. This finding is also in agreement with the results of Adaramaja et al. (2024), who revealed a significant difference in teacher factors affecting academic performance in Osun State. The finding is consistent with Adeyemi's (2023) assertion that teachers' teaching experience is significant in relation to students' learning outcomes, as measured by their performance in the SSC examinations.

Findings from research question two showed that respondents agreed that teachers' academic qualifications have a positive impact on students' achievement in Chemistry in Anambra State. This aligns with the study by Ogunjobi and Idowu (2024), which reported that teacher-related factors influence students' academic performance in the West African Examinations Council (WAEC) in Osun State. Similarly, the test of hypothesis two revealed a significant difference in teachers' responses regarding the effect of academic qualifications on students' performance in Chemistry in Anambra State. The finding is in agreement with the views of Owolabi & Adebayo (2022), Ibrahim (2020), Casian, Mugo & Claire (2021), and Bamigbade, Amoo, Oluwadare & Adedokun (2021), who suggest that teachers' academic qualifications have a significant relationship with students' learning outcomes.

Findings from research question three showed that respondents agreed that teachers' use of teaching methods has a positive impact on students' achievement in Chemistry in Anambra State. Additionally, hypothesis three revealed a significant relationship between the teachers' teaching methods and students' learning outcomes in Chemistry in Anambra State secondary schools. This shows that students will achieve better academically if teachers adopt the appropriate teaching methods during the instructional delivery process. What could be responsible for this finding is the fact that teachers who are conversant with modern teaching methods, the use of Information

and Communication Technology (ICT), and instructional resources have also achieved better outcomes in cognitive, affective, and psychomotor domains. This finding aligns with the studies of Aina (2018) and Ogunjobi, Adedara & Ogunleye (2021), which suggest that the teaching methods used in entrepreneurship are primarily theoretical and need to be enhanced with practical knowledge and skills to prepare students for future careers in the workforce. This is supported by Abdulhamid (2023), who states that selecting an appropriate teaching method is essential to the success of the teaching and learning process.

Findings from research question four indicated that respondents agreed that teachers' family size positively influences students' academic achievement in Chemistry in Anambra State. This is consistent with the study by Akinwumi (2017), which highlighted teacher-related factors as determinants of students' performance. Likewise, the result of hypothesis four revealed a significant difference in teachers' responses concerning the effect of family size on students' performance in Chemistry in Anambra State. This outcome supports the views of Owolabi & Adebayo (2012), Ibrahim (2020), Casian, Mugo & Claire (2021), as well as Bamigbade, Amoo, Oluwadare & Adedokun (2021), who all emphasised that teachers' family size has a strong relationship with students' learning outcomes.

5. Conclusion

Based on the findings of this study, it was concluded that Chemistry teacher-related factors, such as teaching experience, academic qualifications, and the use of teaching methods, were significant factors that influenced students' learning outcomes in Chemistry in secondary schools in Anambra State. It was also concluded that there were significant differences in teacher-related factors and students' academic performance in Chemistry in Anambra State.

6. Recommendations

Based on the findings of the study, the following recommendations were made;

1. Stakeholders should intensify efforts to enhance students' learning outcomes in Chemistry by creating a more conducive environment for effective teaching and learning.
2. Government and school administrators need to strengthen the management of Chemistry teachers by improving factors such as qualifications, teaching experience, instructional methods and family size to boost students' academic achievement.
3. Chemistry teachers should continually update and diversify their teaching strategies to capture and maintain students' interest in the subject.
4. Only qualified and experienced teachers should be engaged to teach Chemistry at both junior and senior secondary school levels to ensure effective teaching and improved learning outcomes.

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