EXPLORING THE IMPACT OF TEACHER BELIEFS AND ATTITUDES TOWARDS MATHEMATICS EDUCATION IN SECONDARY SCHOOLS IN EKITI STATE, NIGERIA

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Abstract
The study investigated teachers' beliefs and attitudes towards their profession and its influence on students' academic performance in Mathematics. The study adopted a descriptive survey research design. Three research questions were raised and two hypotheses were formulated. The population consists of all public secondary school teachers in Moba Local Government Area of Ekiti State. The study sample size comprised 246 teachers selected from eight public secondary schools across the Local Government Area of Ekiti State using a simple random sampling technique. The research instrument tagged "Teachers' Job Satisfaction and Perceived influence on Students' Academic Performance in Mathematics Questionnaire (TJSPSAPMQ) was used. Descriptive statistics such as frequency count, mean, percentage score and standard deviation were used to answer the research questions raised while inferential statistics such as Pearson's Product Moment Correlation analysis (PPMC) and t-test were used to test the hypotheses formulated at 0.05 level of significance. It was concluded that teachers' satisfaction with working conditions and human relations significantly correlated with the academic performance of students in Mathematics. Based on the findings of this study, it was recommended that school management and the education board should recognize the effort of teachers and reward them appropriately. They should encourage teachers through regular and prompt payment of salaries, good working conditions, regular promotions, and other welfare packages.

Keywords : *Attitude, Beliefs, Job satisfaction, Students' performance, Teachers Perceptions*

Introduction

Education is an ongoing and continuous process that spans over one's entire life. Education can be categorized into two main types: informal education and formal education. Informal education refers to the type of education that occurs in the society, involving all members as students and learners, and taking place continuously and ubiquitously. Education is often employed as a measure of progress. One of the main objectives of education is to generate highly competent individuals who can effectively address the specific challenges faced by a country. Ensuring a satisfied workforce in the sector is crucial for attaining of educational goal. High productivity is the result of employees' time, effort, and dedication to their employment when they experience job satisfaction.

Mathematics education is a cornerstone of academic achievement and a critical component of the educational system worldwide. In Nigeria, the importance of Mathematics education cannot be overstated, as it forms the foundation for the study of science, technology, engineering, and Mathematics (STEM) fields, which are crucial for national development. However, despite its importance, Mathematics education in Nigerian secondary schools, particularly in Ekiti State, faces numerous

challenges. Among these challenges are the beliefs and attitudes of teachers, which play a pivotal role in shaping the learning environment and influencing student outcomes.

The performance of students in Mathematics especially in the Senior Secondary Schools as opined by Popoola (2013) is a matter of great concern to researchers, teachers, parents, educators and administrators. The performance of students in Mathematics could be attributed to certain factors which include inadequate mastery of the subject matter by the teacher, inadequate instructional (both human and material) resources or inappropriate teaching methods by the teacher.

Teacher beliefs and attitudes are significant determinants of instructional practices and student engagement. According to Pajares (1992), beliefs are the best indicators of the decisions individuals make throughout their lives. In the context of education, teachers' beliefs about Mathematics and their attitudes towards teaching the subject can profoundly impact their instructional methods, interactions with students, and ultimately, students' academic performance. These beliefs and attitudes can either foster a positive learning environment that promotes student understanding and interest in Mathematics or create a negative atmosphere that hinders student learning.

In Nigeria, the quality of Mathematics education has been a topic of concern for policymakers, educators, and researchers. Studies have shown that Nigerian students often perform poorly in Mathematics, as evidenced by national and international assessments (Ugwuegbulam & Eze, 2015). This poor performance has been attributed to several factors, including inadequate teaching methods, lack of instructional materials, and the socio-economic background of students (Obidike, 2015). However, the influence of teachers' beliefs and attitudes on Mathematics education has received relatively less attention, despite its critical importance.

The challenges facing Mathematics education are particularly pronounced in Ekiti State. The state has been grappling with the issue of inadequate funding for education, poor infrastructure, and a shortage of qualified Mathematics teachers (Akinsola, 2011). These issues are compounded by the beliefs and attitudes of teachers, which significantly impact their job satisfaction, human relations, and perceptions of their working conditions. Understanding the impact of these factors on Mathematics education in Ekiti State is essential for developing effective strategies to improve teaching and learning outcomes.

According to Popoola (2014) and Akanni (2015) at different times showed that Mathematics teachers in the classrooms are not making use of teaching skills acquired before and after certification. The deficiencies in Mathematics teaching range from non-coverage of contents in schemes of work, non-giving and marking of assignments, non-supervision of instruction, non-organization of practical lessons, non-organization of extra lessons to cover lost grounds, non-proper handling of instructional materials to be used during lessons, non-assessment of learning outcomes regularly, non- application of improvisation knowledge in instruction to non-taking out of students to field experiences (Popoola, 2013).

Teachers' job satisfaction is a critical factor that influences their performance and interactions with students. According to Skaalvik and Skaalvik (2011), satisfied teachers are more likely to be motivated, committed, and effective in their teaching roles. Human relations, including the relationships between teachers and students, colleagues, and administrators, play a significant role in shaping teachers' job

satisfaction. Teacher satisfaction is a critical component of educational effectiveness. It encompasses various aspects such as job satisfaction, professional development opportunities, recognition, and support from colleagues and administration (Dinham & Scott, 2000). Human relations, including interpersonal interactions among teachers, students, and administrative staff, significantly influence teachers' job satisfaction. Positive human relations can lead to a more collaborative and supportive work environment, enhancing teachers' job satisfaction and their effectiveness in the classroom (Hoy & Miskel, 2008). This study aims to examine the relationship between teachers' satisfaction and human relations, exploring how these factors collectively impact Mathematics education in Ekiti State.

The working conditions of teachers, including the availability of resources, administrative support, and the overall school environment, are crucial determinants of their job satisfaction and effectiveness. Research has shown that poor working conditions can lead to teacher burnout, stress, and dissatisfaction (Johnson, Kraft, & Papay, 2012). Teachers' perceptions of their working conditions are also crucial in determining their job satisfaction and effectiveness. Working conditions encompass physical infrastructure, availability of teaching resources, workload, administrative support, and professional autonomy (OECD, 2014). Favorable working conditions can boost teachers' morale, reduce stress, and enhance their commitment to teaching (Johnson et al., 2012). Conversely, poor working conditions can lead to burnout, dissatisfaction, and attrition, negatively impacting the quality of education (Ingersoll, 2001).

Teachers' perceptions of their students' academic performance can influence their teaching methods, expectations, and interactions with students. Positive perceptions can lead to higher expectations and more effective teaching practices, while negative perceptions can result in lower expectations and less effective instruction. Teachers' perceptions of their students' academic performance can influence their teaching strategies and expectations. Teachers who believe their students are capable of achieving high performance are likely to set higher expectations and employ more effective teaching methods (Rubie-Davies, 2006). Conversely, low expectations can lead to a self-fulfilling prophecy, where students perform poorly due to the lack of motivation and support from their teachers (Rosenthal & Jacobson, 1968). This study assesses if there is any relationship between teachers' job satisfaction and their perception of students' academic performance in public secondary schools in Ekiti State, providing insights into how teachers' beliefs and attitudes can shape educational outcomes.

The academic performance of students is often seen as a reflection of the effectiveness of the teaching and learning process. Teachers' job satisfaction and human relations are likely to influence their instructional practices and interactions with students, which in turn affect student outcomes. Understanding the interplay between teachers' job satisfaction, human relations, and academic performance is essential for improving educational outcomes. Research suggests that satisfied teachers who experience positive human relations are more likely to be effective in their teaching practices, leading to better student performance (Caprara et al., 2006). This study seeks to determine if there is a significant relationship between teachers' job satisfaction, human relations, and the academic performance of secondary school students in Ekiti State. By exploring these relationships, the study aims to provide insights into how improving teacher satisfaction and fostering positive human relations can enhance Mathematics

education.

The impact of teacher beliefs and attitudes on Mathematics education is a critical area of research that holds the potential to enhance educational outcomes in Nigerian secondary schools. By examining the relationship between teachers' satisfaction, human relations, working conditions, and their perceptions of students' performance, this study aims to provide actionable insights that can improve Mathematics education in Ekiti State. The findings will be valuable for educators, policymakers, and stakeholders committed to fostering a conducive learning environment and promoting excellence in Mathematics education.

Statement of the Problem

Mathematics education in Nigerian secondary schools, particularly in Ekiti State, faces significant challenges that impact student performance and overall educational outcomes. Despite various reforms and interventions, the quality of Mathematics education remains suboptimal, as evidenced by consistently low performance in national examinations. Among the myriads of factors influencing this situation, the beliefs and attitudes of Mathematics teachers play a crucial role. Teachers' job satisfaction, their perceptions of working conditions, and the nature of human relations within schools are critical variables that influence their teaching practices and interactions with students. However, there is a lack of comprehensive research exploring how these factors specifically affect Mathematics education in Ekiti State. Understanding the impact of teacher beliefs and attitudes on Mathematics education is essential for devising effective strategies to enhance teaching quality and improve student performance. This study aims to fill this gap by examining the relationship between teachers' satisfaction, human relations, working conditions, and their perceptions towards students' academic performance, thereby providing insights into how these factors collectively shape the landscape of Mathematics education in Nigerian secondary schools.

The purpose of this study was to examine the impact of teacher beliefs and attitudes towards Mathematics education in secondary schools in Ekiti State. The study specifically:

i. examined the relationship between teachers' satisfaction and human relations;
ii. investigated teachers' perceptions of their working conditions;
iii. determined if there is any relationship between teachers' job satisfaction, human relations, and the academic performance of secondary schools; and
iv. assessed if there is any relationship between teachers' job satisfaction and their perception of students' academic performance in public secondary schools.

To guide the research, the following research questions were raised:

11. What is the teachers' belief on job satisfaction?
12. What is teachers' perception on their working conditions?

To direct the study, the following null hypotheses were postulated.

1. There is no significant relationship between teachers' job satisfaction with human relations and the academic performance of secondary schools.
2. There is no significant relationship between teachers' job satisfaction and their perception of students' academic performance in public secondary schools.
3.

Methodology

This study adopted a descriptive

survey research design. The population consists of all public secondary school teachers in Moba Local Government Area of Ekiti State. The study's sample size comprised 246 teachers selected from eight public secondary schools across the Local Government Area of Ekiti State using simple random sampling technique. A questionnaire regarding Teachers' Job Satisfaction and perceived influence on students' academic performance in Mathematics Questionnaire (TJSPSAPMQ) was used as the research instrument. Four points likert scale was used to calculate the respondent's answers. Descriptive statistics such as frequency count, mean, percentage score and standard deviation to answer the research questions and inferential statistics such as Pearson's Product Moment Correlation analysis (PPMC) and t-test were used to test the hypotheses formulated at 0.05 level of significance. The research instrument was scrutinized by experts for the appropriateness of each item. Test re-test reliability method was adopted to establish the reliability of the instrument. Correlation coefficients of 0.81 were obtained indicating that the instruments for data collection and reliable. Pearson's Product Moment Correlation Analysis statistical tool was the inferential statistic used to test the two hypotheses formulated for the study at a 0.05 level of significance. A total number of 270 questionnaires were administered but 246 were returned, Hence the administration of the questionnaire achieved a 91% rate of return.

Results

Table 1: Demographic data of the respondents

Variable	Frequency	Percent
Gender		
Male	78	31.7%
Female	168	68.3%
Total	**246**	**100**
Age		
Below 21years	15	6.1%
25-30years	69	28%
31-40years	97	39.4%
41-50years	60	24.4%
50years and above	5	2%
Total	**246**	**100**
Qualification		
NCE	5	2%
B. Sc/B. Ed	120	48.8%
PGDE	106	43.1%
M. Sc/M. Ed	15	6.1%
Total	**246**	**100**
Working Experience		
1-5years	30	12.2%
6-10years	107	43.5%
11-15years	79	32.1%
16-20years	30	12.2%
Total	**246**	**100**

Research Question 1: What is the teachers' belief on job satisfaction?

Table 2, reveals that 69.5% of the teachers get along with their colleagues, while 30.5% of the teachers does not. In a similar vein, 67.5% of the teachers agreed that they like the people with whom they work while 32.5% of the teachers disagreed. Additionally, 79.7% of teachers get along with the students, whereas 20.3% of the teachers disagreed, with 91.8% of the teachers agreeing and 8.2% of the teachers disagreeing that they dislike the people with whom they work with. Finally, 93.9% of the teachers believed while 6.1% of the teachers disagreed that their relationship with their colleagues affects their job satisfaction.

Table 2. Frequency count and percentages on teachers' satisfaction and human relation.

S/N.	Items	Agree (SA+A)	Disagree SD+D)	Mean
1.	I get along with my colleagues	171 (69.5%)	75 (30.5%)	2.85
2.	I like the people with whom I work	166 (67.5%)	80 (32.5%)	2.99
3.	I get along with my students	196 (79.7%)	50 (20.3%)	3.21
4.	I dislike the people with whom I work	226 (91.8%)	20 (8.2%)	3.52
5.	My relationship with my colleagues affects my performance	231 (93.9%)	15 (6.1%)	3.48
Grand Total/ Mean		**990 (80%)**	**240 (20%)**	**3.21**

This suggests that the academic success of secondary schools in the Moba local government area is influenced by teachers' job satisfaction in public secondary schools. On a general note, the grand mean value of 3.11 exceeded the statistical benchmark 2.50 set. Also, 76% of the teachers agreed with the statement raised on the teachers' satisfaction and human relations, implies that the level of teachers' satisfaction with human relations in secondary schools is high and this would positively affect their job performance.

Research Question 2: What is teachers' perception on their working conditions?

Table 3 revealed that 58.2% of the teachers are satisfied with their office space and arrangement while 41.9% of the teachers disagreed. Similarly, 65.9% of the teachers were comfortable with their office furniture to perform their jobs without getting tired while 34.1 % of the teachers disagreed, 69.5% of the teachers are satisfied that their workplace provides conducive environment while 30.5% of the teachers were not satisfied that their workplace environment. 89.8% of the teachers supported that the favorable rules and regulations enhance their job performance while 10.2% disagreed. 34.9% of the teachers subscribed that physical surroundings in their schools are unpleasant while 65% of the teachers' physical surroundings in their schools are pleasant.

Table 3. Frequency counts and percentages on teachers' working conditions

S/N.	Items	Agree (SA+A)	Disagree SD+D)	Mean
1.	I am satisfied with my office space and arrangement	143 (58.2%)	103 (41.9%)	2.65
2.	My office furniture is comfortable enough for me to perform my jobs without getting tired	162 (65.9%)	84 (34.1%)	2.75
3.	My workplace provides an undisturbed environment without any noise gives me time to perform my duties	171 (69.5%)	75 (30.5%)	2.85
4.	My school has favorable rules and regulations enhance my job performance	221 (89.8%)	25 (10.2%)	3.21
5.	The physical surroundings in my school are unpleasant	86 (34.9%)	160 (65%)	2.28
Grand Total/ Mean		**783(64%)**	**447(36%)**	**2.75**

Test of Hypotheses

Hypothesis 1: There is no significant relationship between teachers' job satisfaction with human relations and the academic performance of secondary schools.

Table 4 shows that the calculated 'r = 0.382 and the P < 0.05. Hence, the null hypothesis which says that there is no significant relationship between satisfaction with human relations and academic performance is rejected. There was a positive relationship between job satisfaction and academic performance of secondary schools. It then means that there is a significant relationship between satisfaction with human relations and the academic performance of secondary schools in the Moba Local Government Area.

Table 4. Relationship between teachers' job satisfaction with human relations and the academic performance of secondary schools

Variables	Mean	SD	N	df	r-cal.	r-crit.	P-value	Decision
Satisfaction with Human Relations	15.27	3.47	246	244	0.382	0.138	.002	Reject
Academic Performance	13.22	4.75						

P<0.05

Hypothesis 2: There is no significant relationship between teachers' job satisfaction and their perception of students' academic performance in public secondary schools

Table 5 shows that, r = 0.41, P < 0.05, hence, the null hypothesis which says that there is no significant relationship between satisfaction with the working condition and academic performance of secondary schools is rejected. Therefore, there was a positive relationship between satisfaction with the working condition and academic performance of secondary schools. It then means that there is a significant relationship between satisfaction with working conditions and the academic performance of secondary schools in the Moba Local Government Area.

Table 5. Relationship between satisfaction with working conditions and teachers' commitment in secondary schools' secondary schools.

Variables	Mean	SD	N	df	r-cal.	r-crit.	P-value	Decision
Satisfaction with Working Conditions	12.53	3.29	246	244	0.41	0.138	.002	Reject
Academic Performance	13.22	4.75						

P<0.05

Based on the Table 5, it was discovered that the human relation of teachers is significantly related to students' academic performance because the irregularity in the payment of teachers' salaries is a major obstacle to the teaching and learning process which imposed a negative impact on the students. This finding is the principal determinants of students' achievement are the teachers who taught the students the basic principles of learning and achievement. Therefore, the quality of teachers determines the quality of educational outcomes.

Conclusion

The study has proven that job satisfaction is an important element impacting the academic achievement of students. The study's empirical validation shows that job satisfaction factors like working conditions and advancement opportunities have a significant impact on teachers' levels of job performance, which has a direct bearing on students' academic performance. It was concluded that teachers' satisfaction with working conditions, remuneration, and human relation significantly influence student academic performance in secondary schools in Moba Local Government Area.

Recommendations

Based on the conclusion above, the following recommendations were proffered:

1. School management boards should recognize the pivotal role teachers play in education and motivate them to play their role effectively.
2. Policy-makers and administrators should cultivate good motivational practices to encourage the teachers, to enhance their working conditions in other to increase their level of job satisfaction.
3. Teachers' job satisfaction should be improved by ways of higher salaries, provision of welfare packages, in-service training and a conducive working environment provision of educational facilitates that will aid effective job performance
4. There is also the need for more research institutes to identify what could particularly trigger teachers' performance and productivity.

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