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Gender as a correlate of students' interest in science and Mathematics education in universities in Makurdi

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Abstract

Gender as a correlate of students' interest in science and Mathematics education in universities in Makurdi was studied using a correlational research design. The study was guided by two objectives, two research questions and two hypotheses. A population of 1,784 (860 males and 924 females) undergraduate from Rev. Fr. Moses Orshio Adasu University and Joseph Sarwuan Tarka University Makurdi were used for the study. A stratified random sampling of 150 (59 males and 91 females) undergraduates was used for the study. Undergraduates' interest in Science and Mathematics scale (UISMS) was validated by two experts in science education; it was trial tested using Cronbach's alpha with a value of 0.9 which was used for data collection. Pearson Product Moment Correlation (PPMC) was used to answer research questions and to test hypotheses. Findings from the study reveals that there was no statistically significant correlation between gender and interests in Science education among male and female undergraduates, gender has no statistically significant correlation on undergraduate's interest in Mathematics education in Universities in Makurdi, Based on the findings of the study, it was established that; gender has no statistically significant correlation in undergraduate's interests in Science and Mathematics education in Universities in Makurdi. Based on the findings it was recommended that teachers should make use of alternative teaching methods like the use of games and simulations to motivate students' interest (male and female) in the learning of Science and Mathematics education.

Keywords: Education, Science, Science Education, Mathematics Education, Interest and Gender

INTRODUCTION

Education is the process of simplifying learning, acquiring knowledge, skills, values, and habits. It encompasses various aspects, including: formal education, informal education and science education through which individuals can understand the natural world. Learners can develop a deeper understanding of the natural world, cultivate critical thinking and problem-solving skills and prepare for careers in Science, Technology, Engineering and Mathematics (STEM) fields. Education has been averred to be a process of human enlightenment and empowerment for the achievement of better quality of life that leads to development of harmonious personality. It involves all aspects of intellectual, religious, moral and physical personality of an individual which is carried out in schools and colleges (Ayua, 2009; Ayua, 2018; Ayua & Terhemba, 2026; Mohamed & Aron, 2017). These institutions prepare pupils of various genders for education or for occupation or for family life and so on. More so, speaking of gender, it is crucial to know that research on gender differences has a long history among which the gender gaps in Science and Mathematics have been a concern (Ayua, et al. 2026; Jia et al., 2023). Also, Beede et al. (2020) lament that scholars have explored how gender influences students' attitudes, perception, motivation including interest towards these traditional male-dominated science fields like science and Mathematics.

Science has been severally defined and all of the conceptions point to it as an attempt to seek solutions to man's problems in every area of life. The scientific knowledge of science is relevant and applicable in all areas of life endeavours, without which life on the planets is miserable and primitive. Therefore, the relationship between gender and academic interest, particularly in Science and Mathematics education, has a prominent area of research in science education and education psychology and gender studies. As the global demand for STEM professionals continues to rise, understanding the gender dynamics at play in these STEM fields has become increasingly important for promoting diversity, equity, and inclusion in science education (Ayua et al., 2025; Cheryan et al., 2021)

Science education is seen as the field concerned with sharing science content and process with individuals not traditionally considered part of the scientific community (Hassan, 2021). The learners may be students in universities, colleges or adults within the general public; the field of science education includes work in science content, science process (the scientific method), and some teaching pedagogy. Therefore, it could be established that science and Mathematics are among the important subjects which increase one's ability to logical thinking, problem solving and reasoning. In today's era of globalization, science is one of the primary elements and proved very useful in the field of business too. Science education plays a fundamental role in the social, economic, and technological advancement of any nation. It equips learners with the knowledge, skills, and attitudes necessary for innovation, problem-solving, and sustainable development (Ayua, et al., 2023; Ayua et al., 2026; Jirgba & Bur, 2019). In developing countries such as Nigeria, science education is viewed as a strategic tool for industrialization and national growth because it fosters creativity, rational thinking, and the ability to apply scientific principles to everyday life (Ayua, et al., 2026; Lamb et al., 2020; Su, 2020). As global priorities shift toward digital competence and sustainable technologies, gender interest in Science and Mathematics has been a serious concern. However, several studies have shown gender differences in students' interest in Science and Mathematics, with males showing higher ratings of interest and confidence in these disciplines as compared to females (Dasgupta et al., 2021).

Mathematics plays a pivotal role in fostering critical thinking, problem-solving skills, and analytical abilities among students (Jones, 2018). According to Alechenu (2012) Mathematics is the "mother" of all sciences without which it would be difficult for people to study other sciences like Physics, Chemistry, Biology and Information Technology. However, the impact of gender is static and is often shaped by socio-cultural contexts, institutional factors and educational interventions (Tenenbaum & Ruck, 2020).

Moreso, Gonzalez and Kuenzi (2021) posit that gender stereotypes and societal expectations can affect students' self-concept, aspirations including interest, leading to differences in how males and females engage with science and Mathematics in STEM fields.

Gender is the characteristics of being male or female. Gender as conceptualized by the World Health Organization (WHO, 2020) is the social, cultural and psychological attributes, and expectations associated with being male, female. Gender disparity in interest and participation in science and Mathematics education at the university level are long-standing phenomena that continue to influence student engagement, academic outcomes and career choices in STEM fields. Despite the global efforts to promote gender in STEM disciplines, male students continue to show higher outcomes, while female students often show lower interest and engagement. Schmidt et al. (2021) opine that gender disparity interest toward science and Mathematics can be attributed to a variety of socio-cultural factors, including gender stereotypes, socialization patterns and cultural expectation. The societal norms sometimes tend to direct girls away from science and Mathematics, viewing these STEM subjects as male domains. These societal influences often persist through the university, shaping students' beliefs about their capabilities in STEM fields (Stevenson et al., 2020) Studies have shown that while girls perform similarly to boys in Mathematics and Science, their interest in pursuing these fields often lags behind that of their counterpart males' peers (Perry et al., 2020)

Interest is the desire one has on something and its evidence by the disposition of action. Interests can be referred to as the drive, curiosity and enthusiasm that an individual showcase towards learning; including Science and Mathematics (Adie & Ayua, 2025; Olaf e al., 2021) The interests span from student's engagement with relevant materials, student's pleasure and satisfaction that they get from learning in STEM disciplines. Interest in Science and Mathematics education is a life-threatening factor influencing students' interest, engagement and persistence in these fields. Research shows that female students often exhibit lower ratings of interest in STEM subjects compared to their male counterparts, though they may perform similarly in these STEM areas (Olaf et al., 2021). This gender difference is linked to various factors, including gender stereotypes, societal expectations, and stereotype threat, which may undermine female students' self-efficacy and diminishing their interest in pursuing STEM education at the university level (Good et al., (2020). Makarova (2022) adds that the lack of female role models in STEM, as well as a masculine culture within many STEM departments, contributes to the gender gap in students' interest in these fields.

Upon completion of this study, it may benefit undergraduates, educators, policymakers, parents, researchers, universities and society. Understanding the relationship between gender and interest in Science and Mathematics education, it can help students to identify and address potential biases or barriers, increasing their engagement and performance in STEM subjects. Insights from this research can inform teaching methods and materials, enabling educators to better cater to diverse learning styles and interests and promote inclusivity in the classroom. The findings can inform policy decisions on, addressing gender disparities and developing targeted interventions to increase participation and retention in science and Mathematics programmes**.** Understanding the correlates of interest in Science and Mathematics education can help institutions develop strategies to improve students' admission, retention and success in STEM fields, enhancing their reputation and academic offerings (Ayua, 2020). Awareness of the impact of gender on interest in Science and Mathematics can encourage parents to support and motivate their children, regardless of gender, to pursue STEM fields.

This study can contribute to existing literature, providing a foundation for further research on gender and STEM education and informing the development of effective interventions. Addressing gender disparities in STEM education can contribute to a more diverse and inclusive workforce, driving innovation,

economic growth and social progress. These groups may benefit from the research findings, which may inform strategies to promote inclusivity, address biases and increase participation in Science and Mathematics education**.** This study focuses on investigating the relationship between gender and undergraduates' interest in Science and Mathematics education in universities in Makurdi, Benue State, Nigeria as shown in figure.

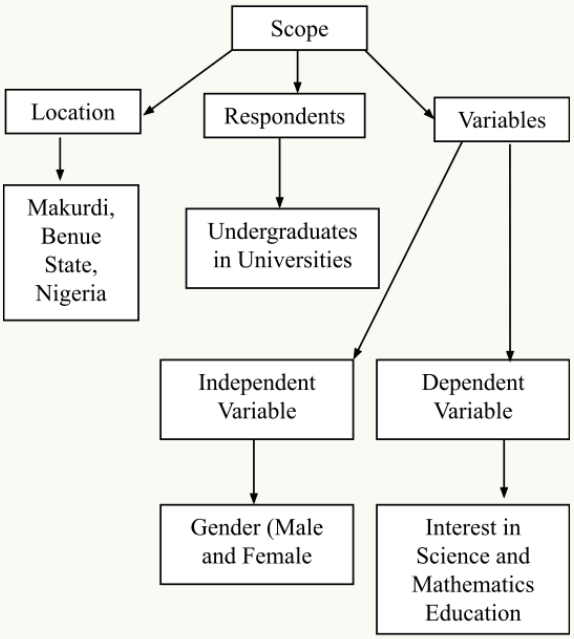

Figure 1: The Schematic Representation of Conceptual Framework and Scope

Figure 1: shows the diagrammatic representation of scope of the study showing the location of the study, respondents and independent and dependent variables**.** Pictorially, Figure 1 shows that the study was carried out in Makurdi, Benue State, Nigeria. It also shows that the study involved undergraduates' university. Figures 1, further show independent variables to be gender and the dependent variables to be interested in Science and Mathematics education.

Theoretically, this study is anchored on Lent et al., (1994) Social Cognitive Career Theory which provides a framework to understand how individuals' interests in various careers are shaped by their belief in their abilities, anticipated results of their actions and personal goals. In the context of gender, the theory highlights how gendered experiences influence self-efficacy and interests in Science and Mathematics. Theory posits that women may develop lower self-efficacy in STEM fields due to societal expectations, lack of encouragement and fewer role models in these fields. The gendered experiences, including internalized gender norms, influence female students' interest in pursuing Science and Mathematics at the university level. According to the theory, these factors may create a cycle where women are less likely to pursue STEM careers, thereby maintaining gender imbalances in STEM fields. This theory explicates how gender-related factors shape interest and engagement in STEM education. This theory is directly applicable to understand how gender mediates students' interest in Science and Mathematics. For instance, the gendered socialization process affects female students' belief in their abilities to succeed in STEM, leading to a decreased interest in pursuing these fields compared to male students. Female students often perceive less competence in Science and Mathematics, which in turn lowers their interest and engagement in these STEM disciplines at the university level. The theory thus provides a theoretical lens for

understanding the gender gap in interest in STEM education and the factors that contribute to the persistence of this gap.

The study also anchored on Eccles (2002) Expectancy-Value Theory which offers a robust framework for understanding students in academic subjects. The theory posits that individuals' academic choices and interest in certain subjects are determined by their expectancy beliefs and the value they place on those subjects. In Science and Mathematics education, students are more likely to develop an interest in these subjects if they believe they can succeed in them and if they value them. Gender plays a significant role in shaping both expectancy beliefs and the value attributed to STEM fields. Societal stereotypes, which associate Science and Mathematics with men, can lead female students to believe they are less capable in these areas, reducing both their expectancy for success and their perceived value of these subjects. This, in turn, influences their interest in science and Mathematics education. This theory is particularly useful for elucidating gender differences in interest in Science and Mathematics education. Female students, who often perceive lower expectations of success in STEM due to societal stereotypes and lack of encouragement, tend to value these subjects less, which reduces their interest in pursuing them in higher education. Conversely, male students, who are generally raised with greater encouragement to engage with Science and Mathematics, have higher expectancy and value beliefs regarding these subjects, leading to greater interest. Subsequently, the theory provides a clear framework for understanding how gendered perceptions of competence and value contribute to differences in students' interest in STEM fields at the university level.

Social Cognitive Career Theory (SCCT) and Expectancy-Value Theory provides valuable insights into the relationship between gender and interest in science and mathematics education at the university level. SCCT highlights the role of gendered socialization and self-efficacy in shaping interest, while Expectancy-Value Theory shows how expectancy beliefs and the value placed on STEM subjects influence students' academic choices. Together, these theories underscore the complexity of how gender influences students' interest in pursuing Science and Mathematics at the university level and highlight the need for targeted interventions to address these disparities.

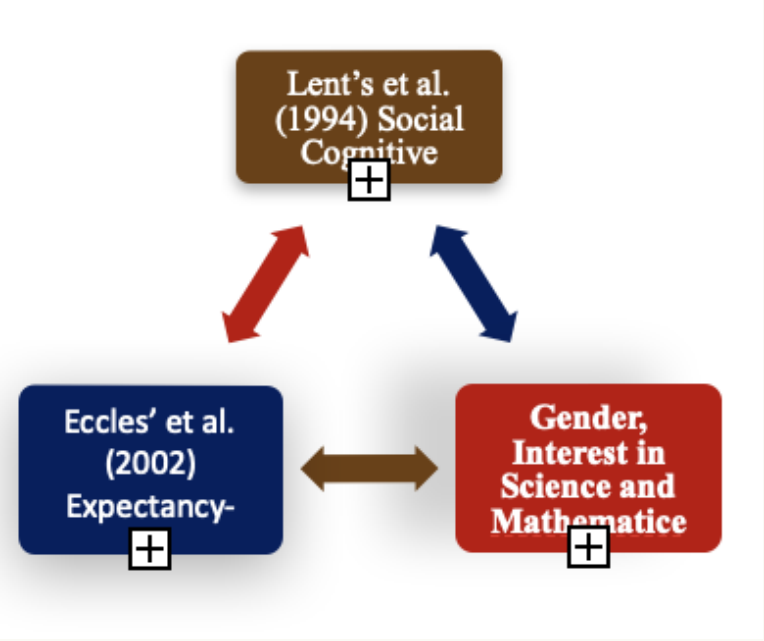

Figure 2: Schematic Representation of Theoretical and Conceptual Frameworks.

Figure 2 shows that two theories anchor the study and give support to explain the foundational concept including gender, interest in science and Mathematics education.

Empirically, Adewuyi (2021) examined the correlation between male and female undergraduates' interest in Science Education in universities in Oyo using a correlational survey design and the results showed a significant positive correlation between male and female students' interest in Science Education. A study investigated gender-based differences in interest in Science Education among undergraduates in universities within Benin and findings indicated a weak but significant correlation between male and female students' interest. The study concluded that cultural expectations may contribute to slight variations in interest levels and recommended mentorship programmes for both genders (Okoh & Ibrahim, 2022). Looking at this (Maduekwe, 2020) evaluated the relationship between gender and interest in Science Education among undergraduates in Kwara-based universities and the results revealed no significant difference in interest levels between males and females. Yusuf and Agbo (2021) explored gender differences in Science Education interest among university undergraduates in Yobe and Results showed a significant correlation between male and female interest levels. Eke (2023) investigated the relationship between gender and interest in Science Education among undergraduates in Anambera universities and findings showed a significant positive correlation between male and female interest levels. Oche and Danladi (2022) and examined whether gender differences correlate with interest in Science Education among undergraduates in Zamfara and Results showed that gender contributed insignificantly to interest levels. Benjamin and Olorunfemi (2021) assessed the correlation between male and female undergraduates' interest in Science Education in Ondo universities and the results revealed a strong correlation between male and female students' interest. Iorliam (2023) explored the extent to which gender correlates with undergraduates' interest in Science Education in universities in Makurdi and the results revealed no statistically significant correlation.

Additionally, Audu and Terna (2021) examined the correlation between male and female undergraduates' interest in Mathematics in universities in Zaria and results revealed a moderate positive correlation between male and female interest levels. Similarly, Kumai (2020) investigated the relationship between gender and interest in Mathematics among undergraduates in Lagos State universities and the results indicated no significant difference between male and female interest but showed a moderate correlation. The results of all the reviewed empirical studies are related to the current study based on gender, undergraduates' level, Science Mathematics education. However, the studies could not bridge the gaps of geographical location, population, sampling and sampling and disparity in results. These have posed a need and focus to determine the correlation between male and female undergraduates' interest in science education in universities and determine the correlation between male and female undergraduates' interest in Mathematics in Universities in Makurdi.

Statement of the Problem

In spite of the Federal Government's renewed emphasis on Science and Mathematics education as critical drivers of the Fourth Industrial Revolution, the gender gap in participation and performance remains a persistent challenge in Benue State and Nigeria at large. National policy frameworks and advocacy campaigns have consistently called for increased enrolment in Science, Technology, Engineering, Mathematics and Medical Sciences (STEMM), yet empirical evidence indicates that female representation is still disproportionately low. In 2025, the Minister of Education reported that girls account for only 35% of participation in STEMM, necessitating deliberate interventions to close the gap (Federal Ministry of Education -FME, 2025). This aligns with labour statistics showing that women constitute just 22% of engineering and technology graduates and 20% of the ICT workforce annually (National Bureau of Statistics - NBS, 2024). At the university level, the trend is similarly entrenched. The National Universities Commission (NUC, 2020) reported that in the 2018/2019 academic session, male students accounted for 57.1% of enrolment in Science and Mathematics education programmes, while females accounted for

42.9%. Historical studies further reveal that between 2010 and 2015, male enrolment in science courses averaged 68% compared to 32% for females across Nigeria's six geopolitical zones (Adetayo & Owolabi, 2019; Eagly, 2018). Given this sustained disparity, it is imperative to examine gender as a correlate of students' interest in Science and Mathematics Education. Understanding how gender influences interest will provide evidence-based insights for policies and institutional strategies aimed at achieving equity in STEMM participation.

Purpose of the Study

The purpose of this study is to examine gender as correlates of undergraduates' interest in Science and Mathematics education in universities in Makurdi. Considering the listed objectives below:

1. To determine the correlation between male and female undergraduates' interest in science education in Universities in Makurdi.
2. To determine the correlation between male and female undergraduates' interest in Mathematics in Universities in Makurdi.

Research Questions

The following research questions were used to guide the study:

1. What is the correlation between male and female undergraduates' interest in science education in Universities in Makurdi?
2. What is the correlation between male and female undergraduates' interest in Mathematics in Universities in Makurdi?

Hypotheses

The following hypotheses were formulated at 0.05 alpha level of significance to guide the study.

Ho_1: There is no significant correlation between male and female undergraduates' interest in science education in Universities in Makurdi.

Ho_2: There is no significant correlation between male and female undergraduates' interest in Mathematics in Universities in Makurdi.

METHOD

In conducting this study, a correlational research design was adopted. As defined by Emaikwu (2021) correlational research design aims to investigate the relationship between two or more quantitative variables to determine whether there is a relationship or covariance between them. The population of the study is comprised of 1,784 (860 males and 924 females) undergraduates of science and Mathematics education in Rev. Fr Moses Orshio Adasu University Makurdi (MOAUM), and Joseph Sarwuan Tarka University, Makurdi (JOSTUM). The sample size of the study comprises 150 (59 males and 91 females) undergraduates of science and Mathematics education in MOAUM and JOSTUM. Stratified random sampling was used to draw the sample. Firstly, the population was stratified in two based on universities (MOAUM = 705; 294 males & 411 females, JOSTUM = 1,079: 566 males and 513 females). Secondly, random sampling was used to randomly select 150 undergraduate students from the strata by raffle draw. This was done with the use of papers where "Yes" was written on the pieces of papers and mixed with "No" in a container for respondents to choose. Respondents who picked "Yes" were selected. The respondents were allowed to pick ballot papers from the container until the desired sample from each stratum was selected. This was done in all the 4 strata (Science and Mathematics education courses) to ensure that Integrated science, Biology, Chemistry and Physics education courses from the selected universities had an equal chance of being selected for the study.

Undergraduate Interest in Science and Mathematics Education Scale (UISMS) was used to collect data for the study. The UISMS had two sections, A and B. Section A solicited information on demography of respondents, section B of the questionnaire is divided into two clusters I and II with twenty items. Cluster I contained item 1-10 which measured correlation between gender and undergraduates' interest in science education. Cluster II contained item 11-20 on correlation between gender and undergraduates' interest in Mathematics education. The questionnaire is structured on a five point-Likert scale with weight assigned to; strongly agreed (SA) = 5 Agree (A) = 4, Undecided (UN) = 3 Disagree (D) = 2 and strongly disagreed (SD) = 1. This scale is chosen because the flexibility of the scale rendered it appropriate for measuring the items of the variables of the study (Appendix A).

The instrument was validated by two experts from the Department of Science and Mathematics Education of Rev. Fr Moses Oshio Adasu University, Makurdi. To determine the reliability of the coefficient of Undergraduate Interest in Science and Mathematics Education Scale (UISMS) was tested using Cronbach's Alpha which yielded a reliability coefficient value of 0.92. The data collected were analysed using Pearson Product Moment Correlation Coefficient to answer the research questions. The decision rule means that r calculated lies between 0 – 0.25 = very weak positive correlation, 0.25 – 0.50 = weak positive correlation, 0.60 – 0.75 strong positive correlation, 0.75 – 0.99 very strong positive correlation but the value of r must always be less than $-1 \leq r \leq 1$.

Results

Research Question One: What is the correlation between male and female undergraduates' interest in science education in Universities in Makurdi?

Table 1: ***Correlation between male and female undergraduates' interest in science education in universities in Makurdi***

	Male	Female	UISE
Male	1		
Female	.010	1	
ISE	-.281*	.052	

The result in Table 1 shows that the Pearson correlation coefficient between male gender and interest in science education is r = -0.281, which is a low negative correlation and that of female gender is r = 0.052, which is very weak. This implies that there is no meaningful linear relationship between female gender and interest in science education. The correlation between male and female is r = 0.010, indicating virtually no relationship, as expected for mutually exclusive categories. The analysis shows a significant negative correlation between male gender and interest in science education, indicating that male students tend to have slightly lower interest in science education. Meanwhile, female students' interest shows no significant correlation.

Research Question Two: What is the correlation between male and female undergraduates' interest in Mathematics in Universities in Makurdi?

Table 2: ***Correlation between Male and Female Undergraduates' interest in Science Education in Universities in Makurdi. (N=150)***

	Male	Female
Gender	.941	
UISE	.031	.627

The result in Table 2 presents the p-value between male and female interest in science education among male students is 0.031, which is less than 0.05. This means there is a statistically significant negative correlation between gender and science education interest among male students. The p-value is 0.627, which is greater than 0.05. This means there is no statistically significant correlation between gender and interest in science education among female students. Since the p-value for male students (0.031) is statistically significant, the null hypothesis for the male subgroup was rejected. This implies that gender does not have a significant effect on male undergraduates' interest in science education in Universities in Makurdi. However, because the female subgroup shows no significant correlation (p = 0.627), gender does not significantly affect female students' interest in science education. Hypothesis one is partially rejected, gender significantly correlates with interest in science education among male undergraduates, but not among females.

Ho_1: There is no significant correlation between male and female undergraduates' interest in science education in Universities in Makurdi.

Table 3: ***Correlation Between male and female Undergraduates' Interest in Maths in Universities in Makurdi (N=150)***

	Male	Female	UIME
Male	1		
Female	.010	1	
IME	-.155	-.027	1

Table 3 shows that the Pearson correlation coefficient between male gender and interest in Mathematics education is r = -0.155. This indicates a low negative relationship, meaning that as the proportion of male students increases, their interest in Mathematics education slightly decreases. The correlation between female gender and interest in Mathematics education is r = 0.027, which is very weak and essentially no relationship. The correlation between male and female is r = 0.010, as in the previous table, confirming these are independent categories. There is a very weak, negative correlation between gender (both male and female) and undergraduates' interest in Mathematics education. This suggests that gender has minimal influence on students' interest in Mathematics education in Universities in Makurdi.

Ho_2: There is no significant correlation between male and female undergraduates' interest in Mathematics in Universities in Makurdi.

Table 4: ***Correlation between male and female undergraduates' interest in Maths in Universities in Makurdi. (n=150)***

	Male	Female
Gender	.941	
UIME	.241	.799

Table 4 shows that the p-value is 0.241, which is greater than 0.05. This indicates that there is no statistically significant correlation between male and female interest in mathematics among male students. The p-value is 0.799, also greater than 0.05. This likewise shows no significant correlation between gender and interest in mathematics among female students. Since both p-values are above 0.05, the results indicate that gender does not significantly correlate with undergraduates' interest in Mathematics education for either male or female students. The null hypothesis is retained. This means that gender has no statistically significant effect on students' interest in Mathematics education in Universities in Makurdi.

DISCUSSION

The current study's findings, which show a statistically significant negative correlation between gender and science education interest among male undergraduates ($p = 0.031$), but no significant correlation among female students ($p = 0.627$), present a mixed pattern when compared with previous empirical studies. The significant relationship found for the male subgroup contrasts with Adewuyi (2021), whose results showed a significant positive correlation between male and female students' interest in science education; unlike Adewuyi's finding of mutual reinforcement of interest, the present study reveals a negative pattern for males and no relationship for females. The results also partially align with Okoh and Ibrahim (2022), who reported a weak but significant correlation and attributed variations to cultural expectations. While the current study similarly identifies a significant gender effect, it does so only among male students, not females, suggesting that contextual or cultural factors may influence male interest more strongly in Makurdi. In contrast, the findings differ from those of Maduekwe (2020), who found no significant gender difference in interest levels in Kwara universities; however, the present study agrees with Maduekwe regarding females, as no significant correlation was found for that subgroup. Similarly, the significant correlation found among male students contradicts Yusuf and Agbo (2021), who reported a significant correlation for both male and female interest levels in Yobe. The present results also diverge from Eke (2023), whose study found a significant positive correlation between gender and interest for both genders in Anambra, whereas the current study shows significance only for males and in a negative direction. However, the findings align more closely with those of Oche and Danladi (2022), who concluded that gender contributed insignificantly to interest levels; this is especially true for the female subgroup, where no significant relationship was found. The study likewise contrasts with Benjamin and Olorunfemi (2021), who reported a strong positive correlation between male and female students' interest levels in Ondo universities, unlike the weak or nonsignificant relationships observed here. Finally, the current findings support those of Iorliam (2023), who found no statistically significant correlation between gender and science education interest in Makurdi universities; although the present study shows significance for males, the overall pattern especially for females still reinforces the conclusion that gender does not consistently predict students' interest in science education across contexts.

The findings of the current study, which show no statistically significant correlation between gender and undergraduates' interest in Mathematics education as indicated by p-values of 0.241 for male students and 0.799 for female students are only partially aligned with previous empirical evidence. The result contrasts with Audu and Terna (2021), who reported a moderate positive correlation between male and female students' interest in Mathematics in Zaria, suggesting that gender played a more influential role in shaping students' interest in their context. While their findings indicate that male and female interest levels tended to rise and fall together, the present study shows no such relationship. However, the current findings more closely agree with those of Kumai (2020), who found no significant difference between male and female interest in mathematics among Lagos State undergraduates. Although Kumai (2020) still reported a moderate correlation between genders, the absence of significant gender influence in both studies suggests that gender alone may not be a meaningful determinant of students' interest in mathematics across different university settings. Overall, the current study reinforces the view that gender does not significantly affect students' interest in mathematics, although it diverges from studies that observed a moderate correlation between male and female interest levels.

CONCLUSION

In conclusion, this study found a statistically significant negative correlation between gender and interest in science education among male undergraduates in Universities in Makurdi, which led to the rejection of the null hypothesis for the male subgroup. However, no significant correlation was found between gender and science education interest among female students and no significant correlation was observed between gender and interest in Mathematics education for both male and female students. Therefore, the study partially rejects the hypothesis, concluding that while gender significantly influences male students' interest in science education, it does not have a significant impact on either female students' interest in science or students' interest in Mathematics.

RECOMMENDATIONS

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

1. Teachers should make use of alternative teaching methods like the use of games and simulations to motivate students' interest (male and female) in the learning of science and Mathematics education.
2. Interest has the potential of improving students' achievement positively and should be encouraged among students.
3. Integrated Science and Mathematics teachers should teach in such a way as to arouse the interest of the students.
4. Teachers should be motivated so that they may assist students in teaching and learning Mathematics‟ skills to increase students‟ interest in studying Mathematics to foster high academic performance.
5. Further research is demanded to study the reasons behind gender differences deeply.

Data Availability

The data supporting the conclusions of this study are available upon request from the corresponding author. However, due to privacy and ethical considerations, certain sensitive information, such as personal identifiers or data collected from participants under confidentiality agreements, cannot be publicly released. These restrictions are in place to ensure compliance with data protection regulations and to safeguard the privacy of the study's participants. For further inquiries or to request access to the aggregated data, interested readers may contact the research team directly, and any requests will be considered on a

case-by-case basis, subject to ethical review and approval. The study was carried out without any limitation.

Conflict of Interest

The authors do not have any conflict of interest.

Funding Source

The authors do not have any Funding Source.

Authors' Contributions

1. Author-1 researched literature, field work and data analysis both conceived the study. Author-2 to 6 involved in protocol development, gaining ethical approval, and patient recruitment.
2. All authors reviewed and edited the manuscript and approved the final version of the manuscript.

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