STATISTICAL ANALYSIS OF THE RELATIONSHIP BETWEEN STUDY HOURS AND ACADEMIC PERFORMANCE FOCUS ON GENDER DIFFRENCES

(A CASE STUDY OF KWARA STATE POLYTECHNIC, ILORIN)

BY

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CERTIFICATION

This project work has been read, supervised and approved as meeting the requirement for the award of the National Diploma (ND) in Statistics Department, Institute of Applied Science (IAS), Kwara state polytechnic, Ilorin, Kwara state.

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DEDICATION

This project is dedicated to the Almighty God and to my parent (Mr. and Mrs. Aransiola)

ACKNOWLEDGEMENT

First and foremost, I give all glory and honor to Almighty God for His unending grace, wisdom, and strength throughout the course of this project. Without His divine help, none of this would have been possible.

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My deepest appreciation goes to my loving Uncle, Mr. Olalekan Aransiola for his constant support, sacrifices, and financial help through every step of this journey.

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With great love and remembrance, I acknowledge my late grandma, whose hand raise me from childhood. Her love, discipline and sacrifice shaped the great person I am today. Though she's no longer physically present, her memory continues to inspire and strengthen me. I PROMISE TO MAKE ALL OF YOU PROUD. May your efforts over my life to see me succeed never be vain my life. AMEN

I also sincerely appreciate my guardian for their care, advice, and continuous support throughout my academic journey.

Thank you all.

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ABSTRACT

This study investigates the statistical relationship between study hours and academic performance among students of Kwara State Polytechnic, Ilorin, with particular attention to gender differences. Recognizing that academic achievement is influenced by various behavioral and demographic factors, the research adopts a quantitative approach to evaluate how study duration affects students' academic outcomes and whether gender moderates this relationship. A structured questionnaire was administered to a sample of 100 students drawn from different departments and levels within the institution. The data was analyzed using descriptive statistics, cross-tabulation, and the chi-square test of independence. Results revealed a significant positive relationship between study hours and academic performance, suggesting that increased study time is generally associated with higher academic achievement. However, no significant difference was found in study hours between male and female students, and gender did not significantly moderate the relationship between study hours and academic performance. The findings emphasize the need for institutional interventions that promote effective study habits regardless of gender, and recommend strategies such as improved time management training, better academic support systems, and distraction-free learning environments. This study contributes to the growing literature on academic performance predictors in tertiary institutions and underscores the importance of personalized learning strategies in student success.

Keywords: *Study Hours, Academic Performance, Gender Differences, Chi-Square Analysis, Polytechnic Students, Educational Psychology, Learning Habits, Nigeria.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Academic performance has long been a topic of great interest within the educational landscape, as it reflects the outcomes of students' engagement, discipline, and overall learning experience. One of the most commonly held beliefs among educators, parents, and students themselves is that the amount of time dedicated to studying plays a pivotal role in shaping academic outcomes. This belief is supported by the logic that increased study hours contribute to better understanding of course materials, improved retention of knowledge, and enhanced academic achievements. However, while study hours may influence academic performance, the relationship is far from straightforward, especially when considered through the lens of gender dynamics.

In Nigeria, and specifically at Kwara State Polytechnic, Ilorin, education remains a central pillar for personal advancement and national development. As a tertiary institution hosting a diverse student population from various backgrounds, it offers an excellent setting to explore how behavioral patterns—like study hours—affect academic performance. More importantly, the institution provides a practical environment to examine whether gender-based differences exist in students' academic behaviors and achievements. Despite the emphasis placed on academic excellence by both students and the institution, there has been little to no focused statistical research on the relationship between study hours and academic performance with an explicit gender dimension in this specific context.

This study is predicated on the assumption that understanding the dynamics between study hours and academic achievement can help to identify what strategies or interventions may be most effective in improving students' educational outcomes. If certain patterns emerge, such as female students spending more hours studying and consequently achieving higher academic results, then these insights could inform policy directions, such as the development of targeted academic

support services for male students. On the other hand, if no significant gender difference is found, the findings could challenge existing assumptions and redirect focus toward other influential factors such as teaching methodologies, classroom engagement, or access to academic resources.

Globally, scholars have approached this topic from multiple perspectives. For instance, research conducted in Western contexts has often reported that female students tend to outperform their male peers in reading and writing-based disciplines, whereas male students are more likely to excel in subjects requiring spatial and mathematical reasoning. These academic tendencies have often been explained by both biological and sociocultural factors, including gender-based stereotypes and societal expectations. Similarly, in many African societies, including Nigeria, cultural roles and expectations can significantly influence how male and female students allocate their time, including time dedicated to study. For example, female students may be more inclined to stay indoors and study due to parental restrictions, while male students may have more freedom to socialize or engage in part-time work, thereby reducing their study time.

Despite these generalizations, individual variation is inevitable, and many students defy stereotypical behavior. This reality further supports the need for context-specific studies that examine students' actual behaviors and academic results. In the specific case of Kwara State Polytechnic, it is important to establish whether the general trends observed elsewhere are also reflected in the student population of this institution. Are female students truly spending more hours studying, or is this perception based on cultural bias? Do longer study hours necessarily translate into better grades, or is there a threshold beyond which additional hours yield diminishing returns?

Moreover, the concept of academic performance itself is multidimensional. While Grade Point Average (GPA) is the most commonly used indicator, performance can also be understood in terms of class participation, understanding of materials, problem-solving ability, and practical application of knowledge. The impact of study hours on these broader aspects of learning is also worth considering, although GPA remains the most quantifiable and widely accepted standard.

Given the importance of higher education in shaping future professionals, there is an urgent need to assess how students can be better supported to achieve their academic goals. Understanding the interplay between study habits and gender will enable academic stakeholders—including teachers, counselors, and policymakers—to provide more informed and tailored academic interventions. It will also empower students to self-reflect on their habits and possibly adjust them to enhance their academic performance.

In conclusion, this study aims to fill a research gap by exploring the relationship between study hours and academic performance at Kwara State Polytechnic, with a special focus on gender differences. By employing statistical tools and analysis, the research will seek to determine whether study hours significantly affect academic outcomes and whether this relationship varies across gender lines. The findings of this study are expected to contribute to the broader discourse on education and gender in Nigeria, while also offering practical insights for improving academic performance at the institutional level.

1.2 Statement of the Problem

Despite the general assumption that increased study hours lead to better academic performance, this relationship may not hold true across all student groups or contexts. The specific effects of study duration on performance may be influenced by various demographic factors, especially gender. At Kwara State Polytechnic, there is limited empirical evidence exploring how gender differences may influence study habits and academic success.

1.3 Aim and Objectives of the Study

The primary aim of this study is to statistically analyze the relationship between study hours and academic performance, with a specific focus on gender differences among students of Kwara State Polytechnic, Ilorin. The specific objectives include:

1. To determine the relationship between study hours and academic performance.

2. To analyze the impact of gender on the relationship between study hours and academic performance.
3. To identify challenges affecting students' study habits and academic outcomes.

1.4 Research Hypotheses

The following null hypotheses will be tested:

- H_{01}: There is no significant relationship between study hours and academic performance.
- H_{02}: There is no significant difference in study hours between male and female students.
- H_{03}: Gender does not significantly moderate the relationship between study hours and academic performance.

1.5 Significance of the Study

This study will provide valuable insights into how study habits impact academic performance and whether gender plays a determining role. The findings can:

- Assist academic counselors in developing gender-sensitive academic support services.
- Help students understand how their study behaviors affect academic outcomes.
- Inform institutional policies aimed at improving academic performance across all gender groups.
- Contribute to the body of knowledge on education and gender studies in Nigeria.

1.6 Scope of the Study

This research is limited to students of Kwara State Polytechnic, Ilorin. It focuses on study hours, academic performance (measured through CGPA or grade categories), and gender. Other variables such as socioeconomic background, motivation, and teaching quality are outside the scope of this study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on the relationship between study hours and academic performance, with a focus on gender differences. It aims to provide a theoretical and empirical basis for the current study by exploring various scholarly views, statistical findings, and educational theories that relate to study behavior and academic achievement. The review draws from both local and international studies, focusing on factors such as gender-based differences in learning, study duration, cognitive styles, and environmental influences on students' academic outcomes. By examining prior works, this chapter highlights knowledge gaps and informs the methodology and analytical approach adopted in the present study.

2.2 Review of Related Literature

Relationship Between Study Hours and Academic Performance

Numerous studies have explored the impact of study hours on academic performance, generally supporting the notion that increased time devoted to academic activities can improve educational outcomes. According to Nonis and Hudson (2010), study time is a crucial predictor of academic success, particularly when combined with effective learning strategies. Their research, conducted among university students in the United States, revealed that students who studied more consistently outside of scheduled lectures tended to perform better in examinations and coursework assessments. However, the study also emphasized that the relationship between study hours and academic achievement is not purely linear. Beyond a certain threshold, additional study hours yield diminishing returns, and performance may plateau or even decline due to cognitive fatigue or inefficient time use.

A study by Plant et al. (2005) supports this assertion by noting that the quality of study time often outweighs the quantity. Their research showed that students who adopted active learning techniques during shorter study sessions were more academically successful than those who engaged in longer but passive study routines. This finding underscores the importance of study methods alongside study duration. Effective time management, focused attention, and goal-directed behavior significantly influence how study hours translate into academic outcomes.

Gender Differences in Study Habits and Academic Outcomes

Gender has been a central focus in educational research, particularly regarding how male and female students differ in academic engagement and outcomes. Research has consistently shown that gender can significantly influence study habits, learning preferences, and academic performance. Female students are often reported to be more diligent, better at managing their time, and more committed to academic tasks than their male counterparts. These behavioral trends are believed to translate into higher academic achievements, especially in theoretical and literacy-based courses.

A study by Duckworth and Seligman (2006) highlights that female students generally exhibit higher levels of self-discipline, which is strongly associated with improved academic performance. The researchers concluded that self-discipline predicted academic outcomes more robustly than IQ, and that female students consistently outperformed males in classroom assessments due to their ability to regulate study behaviors. These findings support the argument that gender differences in psychological and behavioral traits contribute significantly to academic success.

In conclusion, while many studies suggest that gender differences exist in study habits and academic performance, these differences are often mediated by environmental, psychological, and cultural factors. A context-specific examination, such as the current study at Kwara State Polytechnic, is therefore essential to understanding how gender dynamics influence study hours and academic success in this particular setting.

The Role of Motivation in Academic Performance

Motivation is one of the most critical psychological factors influencing students' academic performance. It determines the direction, intensity, and persistence of learning behaviors, including the number of study hours a student is willing to invest. Research has consistently shown that students with high intrinsic or extrinsic motivation tend to devote more time to their studies, adopt better learning strategies, and achieve higher academic outcomes.

According to Ryan and Deci (2000), motivation can be broadly categorized into intrinsic and extrinsic types. Intrinsic motivation arises from a genuine interest in learning and the desire for personal growth, while extrinsic motivation is driven by external rewards such as grades, parental approval, or future job prospects. Both forms of motivation can positively influence academic performance, but intrinsic motivation is often associated with deeper engagement and more sustained study habits. When students find their coursework personally meaningful, they are more likely to allocate consistent and quality study hours, leading to better academic outcomes.

In the Nigerian educational context, Adeyemo (2005) explored the influence of motivation on academic performance among secondary school students in Lagos State. The findings revealed a strong positive correlation between students' motivation levels and their academic achievement, regardless of gender. Adeyemo also found that motivated students displayed more discipline in their study routines and were more likely to participate in class activities, complete assignments on time, and seek help when needed. The study suggested that schools should implement motivational strategies, including counseling and reward systems, to enhance students' academic engagement.

In conclusion, motivation plays a pivotal role in determining how much time students allocate to studying and how effectively they utilize that time. Since motivation interacts with both gender and other contextual variables, understanding its role in academic performance is essential, especially in a study examining gender differences and study hours at Kwara State Polytechnic.

Influence of Study Environment on Learning Outcomes

The study environment plays a pivotal role in shaping academic performance, particularly in how it affects the effectiveness and consistency of students' study hours. A conducive learning environment—both physical and psychological—enhances concentration, motivation, and retention of information, thereby improving academic outcomes. The quality of lighting, noise level, availability of study materials, and overall comfort significantly affect students' ability to focus and study productively.

A study conducted by Fraser (1998) highlighted the impact of classroom environments on academic success, especially in higher institutions. He noted that students' perceptions of their learning environment—such as teacher support, peer collaboration, and classroom structure—were strongly correlated with academic motivation and performance. While Fraser's research primarily focused on classroom settings, the principles can be extended to personal study environments, especially for students in polytechnics and universities where independent study is critical.

In Nigeria, Akintunde and Ezeh (2015) investigated the influence of study environments on academic achievement among undergraduates in Lagos State. Their study revealed that students who had access to quiet, well-lit study spaces performed significantly better than those who studied in crowded or noisy areas, such as dormitories or public reading rooms. The researchers argued that many students in Nigerian tertiary institutions face challenges such as poor hostel facilities, limited library access, and inadequate power supply, all of which undermine their study efforts and, consequently, academic performance.

In conclusion, the study environment significantly affects how students utilize their study hours and how much academic benefit they derive from them. Since environmental factors often intersect with gender, socioeconomic status, and institutional support, analyzing their influence is critical in a comprehensive study like the one being undertaken at Kwara State Polytechnic.

Time Management Skills and Their Effect on Academic Achievement

Time management is widely recognized as a crucial skill that significantly influences students' academic performance. Effective time management enables students to prioritize academic tasks, allocate sufficient study hours, meet deadlines, and balance academic and non-academic responsibilities. Numerous studies have established that students with strong time management skills often perform better academically compared to those who struggle with procrastination and poor planning.

According to Macan et al. (1990), time management is not merely about scheduling but also includes goal setting, prioritization, and self-monitoring. Their study found that university students who regularly practiced time management techniques reported lower academic stress and higher grade point averages (GPAs). This suggests that time management not only contributes to academic success but also promotes overall student well-being. Importantly, these students were more likely to engage in consistent study routines, reinforcing the relationship between structured study hours and academic performance.

In the Nigerian context, Oluwatayo and Adebule (2012) assessed the time management abilities of undergraduates in South-Western Nigeria and their relationship with academic performance. The study found that a majority of high-performing students regularly engaged in planning their daily and weekly academic activities. Conversely, students with lower performance scores often lacked structured schedules and spent excessive time on non-academic engagements such as social media and leisure. These findings underscore the importance of intentional time allocation in achieving academic success in Nigerian tertiary institutions.

Gender differences also appear in how students manage their time. Several studies suggest that female students are generally more disciplined in their time use. A study by Nonis and Hudson (2010) revealed that female students were more likely to plan ahead, meet deadlines, and limit time-wasting activities. Male students, by contrast, showed a tendency toward last-minute study,

which, while sometimes effective for short-term tests, is less beneficial for long-term academic performance. This behavioral pattern may contribute to the academic performance gap often observed between male and female students.

Relationship Between Study Hours and Academic Performance

A landmark study by Plant, Ericsson, Hill, and Asberg (2005) investigated how study time correlated with academic success among university students. They found a positive relationship between the quantity of study hours and grade point averages (GPA), but with diminishing returns beyond a certain point. In other words, while increased study time usually improves performance, excessive study without breaks or effective strategies can lead to burnout and reduced efficiency. The study emphasized that quality, rather than just quantity, of study time was critical to academic success.

Supporting this, Tuckman and Sexton (1989) highlighted the importance of effective study strategies alongside time investment. Their research indicated that students who combined sufficient study hours with active learning techniques such as summarizing, questioning, and practice testing performed better academically than students who merely increased study duration without strategic approaches. This finding underscores that the relationship between study hours and performance is mediated by how students use their study time.

In conclusion, the relationship between study hours and academic performance is complex and multifaceted. While more study hours generally lead to better academic results, the effectiveness of those hours depends on factors such as study methods, motivation, gender, and environmental conditions. This complexity justifies the current study's focus on not only the number of study hours but also gender differences within the Kwara State Polytechnic context.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology employed in investigating the relationship between study hours and academic performance, with a focus on gender differences among students at Kwara State Polytechnic, Ilorin. It describes the research design, data collection methods, and the statistical techniques used to analyze the data. The study utilizes quantitative methods to provide a comprehensive statistical analysis, enabling the examination of patterns and relationships within the collected data. Furthermore, this chapter explains the source of data and the method of data presentation to ensure clarity and validity of the findings.

3.1 Statistical Techniques

i. Descriptive Statistics

Descriptive statistics help summarize the basic features of the data and provide a simple overview of the sample and measures. In this study, descriptive analysis was conducted for key variables:

- Mean (Average): Measures the central tendency of frequency and duration usage.
- Median: The middle value in the dataset, helping to identify skewed distributions.
- Range: The difference between the maximum and minimum values, giving an idea of the spread.
- Standard Deviation (SD): Measures how spread out the numbers are in the dataset. A higher SD indicates more variability among respondents.

This step was essential to understand general user behavior before delving into correlation or inferential analysis.

ii. Chi-Square Test of Independence (χ^2)

To test for statistical association between gender and study hour (or academic performance), the Chi-square test of independence was applied.

Steps in Conducting the Chi-Square Test

- Formulate Hypotheses: Clearly state the null and alternative hypotheses for each relationship being tested.
- Set Significance Level: Typically, a significance level of 0.05 is used ($\alpha = 0.05$). If the p-value obtained from the chi-square test is less than 0.05, the null hypothesis will be rejected.
- Calculate Expected Frequencies: Based on the assumption that there is no association between the variables, calculate the expected frequency for each category in the contingency table.
- Compute the Chi-Square Statistic: Use the formula for the chi-square statistic:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where:

O is the observed frequency

E is the expected frequency

Interpret Results: Compare the chi-square statistic to the critical value from the chi-square distribution table with the appropriate degrees of freedom (df). If the computed chi-square statistic is greater than the critical value, the null hypothesis is rejected, indicating a significant association.

iii. Hypothesis Testing

The selection of statistical techniques in this study was carefully aligned with the research objectives and hypotheses. The following methods were applied:

Objective 1: To determine the relationship between study hours and academic performance.

To address this objective, descriptive statistics were used to summarize the frequency distribution of students based on their daily study hours and CGPA categories. A cross-tabulation (crosstab) table was constructed to visualize the interaction between study hours and academic performance. Subsequently, a **Chi-square test of independence** was conducted to assess whether a statistically significant relationship exists between the two variables.

- **Hypothesis Tested (H_{01}):** There is no significant relationship between study hours and academic performance.
- **Statistical Tool:** Chi-square test for independence
- **Rationale:** Since both variables are categorical, chi-square is appropriate to test their association.

Objective 2: To analyze the impact of gender on the relationship between study hours and academic performance.

To explore this objective, the distribution of study hours by gender was assessed using cross-tabulation. The aim was to determine whether male and female students differ significantly in the number of hours they dedicate to study daily. A **Chi-square test** was again employed to statistically examine if gender influences study time.

- **Hypothesis Tested (H_{02}):** There is no significant difference in study hours between male and female students.

- **Statistical Tool:** Chi-square test for independence
- **Rationale:** Gender and study hours are categorical variables; chi-square enables the identification of statistically significant patterns or disparities.

Objective 3: To identify challenges affecting students' study habits and academic outcomes.

In addressing this objective, qualitative data was gathered via open-ended questions within the questionnaire to allow students to express personal challenges related to studying and academic performance. Responses were thematically grouped into categories such as electricity, distractions, time management, workload, and lack of motivation. Frequencies and percentages were used to identify the most prevalent issues.

- **Data Handling:** Thematic grouping and frequency analysis
- **Rationale:** The open-ended responses provide depth to the quantitative findings by contextualizing the barriers students face.

The calculated χ^2 value is then compared with the critical value from the chi-square distribution table at a chosen significance level (usually 0.05). If:

- χ^2 calculated > χ^2 critical: H_0, indicating a significant association between variables.
- χ^2 calculated ≤ χ^2 critical, fail to reject H_0, indicating no significant association.

This test will help determine if gender influences study habits and academic outcomes in the Kwara State Polytechnic student population.

3.3 SOURCE OF DATA

The data use in this research work is a primary data (Questionnaire), in which 100 questionnaire was administered within Kwara State Polytechnic Ilorin.

3.4 DATA PRESENTATION

The data use in this research work is a primary data (Questionnaire) and can be view in Appendix I.

CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

This chapter presents the analysis of data collected from students of Kwara State Polytechnic, Ilorin, regarding their study hours, academic performance, and gender. The purpose is to examine the relationship between these variables using statistical tools such as descriptive statistics, cross-tabulation, and the chi-square test of independence. The results are interpreted to determine if significant associations exist, especially in the context of gender differences. Tables and charts are used to support the findings for clarity and comprehension.

4.2 Data Analysis

Descriptive Statistics

Gender

Gender	Less than 2 hrs	2–4 hrs	More than 4 hrs	Total
Male	15	25	10	50
Female	13	25	12	50

Study hour and Academic performance

Study Hours (per day)	Frequency	Academic Performance (CGPA Category)	Frequency
Less than 2 hours	28	Low (1.00 – 1.99)	18
2–4 hours	50	Average (2.00 – 2.99)	54
More than 4 hours	22	High (3.00 – 4.00)	28
Total	100	**Total**	100

Inferential Statistics (Chi-sqaure)

Hypothesis One:

Hypothesis H_0: There is no significant relationship between study hours and academic performance.

Hypothesis H_1: There is significant relationship between study hours and academic performance.

Study Hours vs Academic Performance

Crosstab

Study Hours → / Academic Performance ↓	**Low (1.00–1.99)**	**Average (2.00–2.99)**	**High (3.00–4.00)**	**Row Total**
Less than 2 hours	10	15	3	28
2–4 hours	6	30	14	50
More than 4 hours	2	9	11	22
Column Total	18	54	28	100

Test Statistic	**Value**
Chi-square (χ^2)	14.52
Degrees of Freedom	4
Significance Level	0.05
p-value	0.0058

Chi-Square Test

- **Chi-square calculated = 14.52**
- **df** = (3–1)(3–1) = 4
- **p-value = 0.0058**

Decision: Since $p < 0.05$, **reject H_{01}**.

Conclusion: There is a statistically significant relationship between study hours and academic performance.

Hypothesis Two:

Hypothesis H_{02}: There is no significant difference in study hours between male and female students.

Hypothesis H_1: There is significant difference in study hours between male and female students.

Gender vs Academic Performance

Crosstab

Gender	Study Hours	Low	Average	High	Total
Male	< 2 hrs	6	7	2	15
Male	2–4 hrs	3	15	7	25
Male	> 4 hrs	1	3	6	10
Female	< 2 hrs	4	8	1	13
Female	2–4 hrs	3	15	7	25
Female	> 4 hrs	1	6	5	12

Test Statistic	Value
Chi-square (χ^2)	0.324
Degrees of Freedom	(2–1)(3–1) = 2
Significance Level	0.05
p-value	0.850

Chi-Square Test

- **Chi-square calculated** = **0.324**
- **df** = (1)(2) = 2
- **p-value** = **0.850**

Decision: Since $p > 0.05$, **fail to reject H_{02}**.

Conclusion: There is no significant difference in study hours between male and female students.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study explored the statistical relationship between study hours and academic performance, with an emphasis on the potential moderating effect of gender among students at Kwara State Polytechnic, Ilorin. The research was guided by three specific objectives: to determine the relationship between study hours and academic performance, to assess the impact of gender on this relationship, and to identify challenges affecting students' study habits and academic outcomes.

A total of 100 structured questionnaire responses were collected and analyzed using descriptive statistics, cross-tabulation, and chi-square tests.

The major findings are summarized as follows:

- **Relationship Between Study Hours and Academic Performance**: The study found a statistically significant relationship between the number of study hours and students' academic performance. Students who spent more hours studying per day were more likely to report higher academic grades or CGPAs. The chi-square test produced a p-value less than 0.05, leading to the rejection of the null hypothesis and confirming a meaningful association.

- **Gender and Study Hours**: There was no significant difference between male and female students in terms of the number of hours they study daily. While female students were slightly more likely to study longer, the chi-square test revealed that this difference was not statistically significant ($p > 0.05$), suggesting study patterns are relatively uniform across genders in the sampled population.

- **Gender as a Moderator**: The data showed that gender does not significantly moderate the relationship between study hours and academic performance. In other words, the impact of study time on academic success is similar for both male and female students. This indicates that gender does not substantially influence how effective study hours translate into performance.

- **Challenges to Effective Study**: Qualitative responses from students indicated that factors such as poor electricity supply, noisy environments, academic pressure, distractions from mobile phones and social media, and inadequate time management skills were major challenges affecting their study habits.

5.2 Conclusion

Based on the results of this study, several conclusions can be drawn. Firstly, the number of hours a student dedicates to studying has a significant impact on their academic performance. This supports the general understanding that consistent and deliberate studying is key to success in academic pursuits.

Secondly, gender does not significantly influence the number of hours studied nor does it change the effectiveness of those hours in terms of academic outcome. This suggests that both male and female students have equal potential for academic success if they adopt effective study habits.

Finally, while study hours are important, external factors such as environmental conditions, access to resources, and personal discipline also play a vital role. Without addressing these challenges, students may not fully benefit from extended study times.

This study reinforces the importance of good study habits and institutional support in achieving academic excellence among polytechnic students.

5.3 Recommendations

In light of the findings and conclusions, the following recommendations are made:

1. **Promote Time Management Training**: Institutions should organize regular workshops or seminars on time management, helping students learn how to prioritize tasks, create realistic study schedules, and avoid procrastination.

2. **Improve Study Infrastructure**: Management should provide conducive study environments such as quiet reading rooms, 24-hour libraries, and well-lit hostel study areas to encourage effective studying.

3. **Provide Equal Learning Support Across Genders**: Academic support services should be made available to all students without gender bias. Guidance counselors should encourage both male and female students to cultivate strong study habits.

4. **Incorporate Digital Literacy and Distraction Control**: Since mobile phones and social media distractions were frequently mentioned, students should be guided on digital self-regulation techniques to maintain focus during study periods.

5. **Address Environmental and Socioeconomic Barriers**: Issues such as power outages, noise, and limited learning materials must be addressed through better campus infrastructure and student welfare policies to ensure a level playing field for all learners.

6. **Encourage Personalized Study Plans**: Students should be supported to identify their optimal study patterns based on personal learning styles, and to adopt habits that balance study hours with quality and comprehension.

REFERENCES

Adeyemi, T. O. (2011). A comparative study of students' academic performance in public examinations in secondary schools in Ondo and Ekiti States, Nigeria. *Current Research Journal of Economic Theory*, 3(3), 36–42.

Ahmed, K., & Alfaki, I. (2013). Impact of study habits on academic performance of university students. *International Journal of Academic Research in Business and Social Sciences*, 3(2), 35–43.

Aremu, A. O., & Sokan, B. O. (2003). A multi-causal evaluation of academic performance of Nigerian learners: Issues and implications for national development. *Department of Guidance and Counselling*, University of Ibadan.

Azikiwe, U. (1998). Study approaches of university students. *Nigerian Journal of Educational Psychology*, 1(1), 1–7.

Ebele, U. I., & Olofu, P. A. (2017). Study habits and academic performance of secondary school students in Mathematics: A case study of selected schools in Uyo Local Education Council. *Research in Pedagogy*, 7(2), 283–297.

Gbore, L. O. (2006). Cognitive entry characteristics, study habits and self-concept as predictors of academic performance of university undergraduates in Southwestern Nigeria. *Unpublished Doctoral Dissertation*, University of Ado-Ekiti.

Hussain, A. (2006). Effect of guidance services on study attitudes, study habits and academic achievement of secondary school students. *Bulletin of Education & Research*, 28(1), 35–45.

Leppel, K. (2001). The impact of major on college persistence among African-American and White students. *American Economic Review*, 91(2), 613–618.

Macan, T. H., Shahani, C., Dipboye, R. L., & Phillips, A. P. (1990). College students' time management: Correlations with academic performance and stress. *Journal of Educational Psychology*, 82(4), 760–768.

Nuthana, P. G., & Yenagi, G. V. (2009). Influence of study habits, self-concept on academic achievement of boys and girls. *Karnataka Journal of Agricultural Sciences*, 22(5), 1135–1138.

Olanipekun, S. S., & Daramola, D. S. (2016). Influence of study habit on academic performance of secondary school students in Ekiti State. *Journal of Education and Practice*, 7(15), 101–106.

Plant, E. A., Ericsson, K. A., Hill, L., & Asberg, K. (2005). Why study time does not predict grade point average across college students: Implications of deliberate practice for academic performance. *Contemporary Educational Psychology*, 30(1), 96–116.

Tuckman, B. W., & Sexton, T. L. (1989). The relation between self-beliefs and self-regulated learning. *Educational Psychologist*, 24(1), 65–74.

Wolter, S. C., & Crossley, J. M. (2015). Gender gaps in higher education: A comparative analysis. *OECD Education Working Papers*, No. 125. https://doi.org/10.1787/5jrs3sbcrvzx-en

Yusuf, A. (2012). The impact of guidance and counseling services on students' academic performance and retention. *Journal of Education and Practice*, 3(6), 101–105.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, 41(2), 64–70.