

# A Comparative Academic Performance Analysis of Male and Female Students in Secretarial Studies at Tanzania Public Service College, Dar es Salaam Campus

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## Abstract

*This study compares academic performance between male and female students pursuing secretarial studies skills at Tanzania Public Service College Dar es Salaam Campus, by analyzing their performances in six core subjects namely: Typewriting Skills, Shorthand Theory, Hatimkato Nadharia, Computer Application Skills, Secretarial Duties, and Professional Ethics, as well as Communication and Interpersonal skills. The study's main objective is to determine if there are significant variations in academic performance between male and female students. The study employed descriptive and inferential statistics methods specifically Welch's t-Test to analyze the course work and end-of-semester examination scores in 2022/23 and 2023/24 academic years. The assessment scores of 328 students were used as study sample datasets. The study results revealed the absence of significant differences in most core subjects except Computer Application Skills, where males seem to outperform females. To remove the performance gap and promote equitable skills development between the two genders in Computer Applications Skills, immediate interventions such as extra training and incorporating more collaborative projects that foster participation from both genders should be considered.*

**Keywords:** Gender differences, academic performance, academic performance analysis, secretarial studies, students' performance differences.

## 1.0 Introduction

In the modern world, education is very important as it plays a significant role in developing the capabilities of individuals and uncover their potentialities so as to be more successful in the society. One among the factors for achievement of quality education is better academic performance of the students (Islam & Tasnim, 2021). The field of Secretarial studies plays a primary role in preparing students for miscellaneous administrative and support roles in both public and private sectors. The Secretarial profession has undergone some changes over the years from traditionally performing routine roles to the roles of managing office activities and supports various administrative tasks for the prosperity of organizations (Athuman & Mubarak, 2023).

Every study programme has its key subjects normally known as core subjects or modules through which students acquire the necessary skills to be competent in the targeted outcomes. Similarly, Secretarial Studies include a range of necessary subjects such as

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typing, office management, Computer operation and applications, business communication, secretarial duties and etiquettes, and other administrative subjects (Otamiri & Ogbonda, 2015).

Study programmes include males and females, although, in some studies, one gender may massively dominate the other. For example, in engineering, males attend in larger numbers than females (TCU, 2020). In Secretarial studies, the number of females outperforms the number of males. However, the number of male students enrolled in secretarial studies has been increasing significantly in recent years. The involvement of both genders makes educational institutions increasingly focus on promoting equity and understanding performance dynamics.

Despite the important role of secretarial studies in supporting administrative and institutional functions, the research on how gender impacts academic performance is very limited. Studies on gender performance differences in education have been explored in different fields such as Science, Technology, Engineering, and Mathematics (STEM), but remain unexplored in the secretarial field. For instance, there are performance disparities between male and female students in mathematics and science (Gicana & Daradar, 2023; Wrigley-Asante *et al.*, 2023). The existence of unclear academic performance challenges within secretarial studies imposes the gap in knowledge that limits interventions of educational bodies and other stakeholders. Therefore, unveiling this gap will provide some insights that will foster and promote gender equity in the field of secretarial studies which traditionally had been dominated by females.

This study aims to compare the academic performance of male and female students in some core subjects of secretarial studies. The findings in this study will widen the understanding of gender performance variations in secretarial studies. It will also give an alarm to curriculum designers and educators on incorporating teaching strategies and creating learning environments that will favor performance for both genders. To examine this, the study tests the null hypothesis ( $H_0$ ), which states that there is no significant variation in academic performance between male and female students. Conversely, the alternative hypothesis ( $H_1$ ) posits that there is a significant variation in their academic performance in these core subjects.

## **2.0 Literature Review**

### **2.1 Theoretical Review**

This study is steered by three theories namely: social learning theory, gender role theory, and dynamic stereotype theory.

#### **2.1.1 Social Learning Theory**

Individuals learn and change their behaviors and attitudes through observation and imitation of their role models (Bandura, 1977). Since the field of secretarial studies is dominated by females, female students may have several role models while male students may lack one. This may affect the performance of males compared to females.

### 2.1.2 Gender Role Theory

Gender role theory posits that societal expectations and cultural norms of the individuals shape the behaviors and ambitions of individuals based on their gender (Eagly, 1987). Gender relates to individuals' perceptions which cause most people of the same gender to possess some common attributes (Gicana & Daradar, 2023). Historically, it has been perceived that the secretarial studies field is dominated by females. This perception may motivate female and male students differently to the extent of affecting their academic performance differently.

### 2.1.3 Dynamic Stereotype Theory

Dynamic Stereotype theory (Diekman & Eagly, 2000) highlights that stereotypes characterized by social groups in the past may change and continue to change as time goes on. The field of secretarial studies is traditionally associated with female students causing the male students to experience stereotype threats something that may negatively influence their academic performance. However, according to this theory, the stereotype threat may change and influence academic performance differently.

## 2.2 Empirical Review

Studies on gender disparity in academic performance frequently reveal varied results across different disciplines and educational levels. Some studies revealed performance differences, while others revealed insignificant performance variation.

The study of Goni *et al.* (2015), investigated the relationship between academic achievement and gender at a college of education in Born State. They employed a T-test to analyze their hypothesis and used a questionnaire to gather student responses regarding potential gender differences in performance across various education courses. The study revealed the absence of significant variations in academic performance based on gender at the college. The study findings showed that while gender differences in academic achievement are generally minor, they can be more pronounced in certain subjects, such as language arts for females and mathematics for males. According to this study, females perform better in communication skills compared to males. Communication skills is one of the core subjects in secretarial studies.

Kapinga and Amani (2016) conducted a study at Mkwawa University College of Education in Tanzania to examine the factors that influence the academic performance of undergraduate students. The study utilized secondary data, including students' academic results measured by grade point average, entry points, communication skills grades, and demographics such as age and gender. The study found a positive correlation between academic performance in final examinations and students' entry points. However, gender did not have a significant effect on final academic performance and communication skills. That is male and female students had no significant variation in the performance of communication skills.

The study of Imhof *et al.* (2007) investigated the gender gap in computer use and academic performance among university students. The results of their study showed that there was no gender gap in terms of computer access to support studies of the students. However, males and females showed different user behavior whereas males seemed to spend more time on the computer usage for their purposes. Also, the study revealed that

males outperforms female students in performing computer tasks, especially mastering PowerPoint presentations. Computer skills are also one of the core subjects in secretarial studies.

The study of Otamiri and Ogbonda (2015), investigated whether gender impacts the job performance of secretaries. The questionnaire method was used to collect information from responses provided by administrators (supervisors) of secretaries working in two different universities at the River State, Nigeria. The study investigated work performance in computer operation and data processing, supervision of other staff, covering official meetings, and handling of office materials and equipment. The study revealed the existence of significant job performance variations between male and female secretaries. Female secretaries were superior in the areas of supporting administrative tasks (supervision of staff) and management of office materials and equipment. Male secretaries were superior in general computer operation and word-processing applications. Males were also superior in covering official meetings compared to females.

Despite extensive research in the comparison of academic performance between male and female students, there is a notable lack of empirical studies that address gender and academic performance in secretarial studies. In a different approach from the study of Otamiri and Ogbonda (2015) which compared the performance of male and female secretaries in the working environment, this study intended to explore gender-based differences in academic performance within core subjects of Secretarial Studies such as Typing Skills, Communication and interpersonal skills, Secretarial duties and professional ethics, Shorthand theories and its similar Hatimkato Nadharia in Swahili language.

### **3.0 Methodology**

This study employed a quantitative research design to compare and evaluate the academic performance of male and female students in core Secretarial Studies subjects. Quantitative methods were used to collect and analyze numerical data, applying both descriptive and inferential statistical analyses. Descriptive statistics, such as mean and standard deviation, summarized student performance, while hypothesis testing was conducted using an independent samples t-test. Given the unequal variances in sample sizes, Welch's t-test was applied to ensure accuracy in results.

The study population comprised 899 students from the Tanzania Public Service College (TPSC), Dar es Salaam campus, enrolled in NTA levels 4 to 6 during the 2022/2023 and 2023/2024 academic years. A purposive sampling technique was used, selecting 328 NTA level 5 students as the study sample. This level was chosen because it includes all six core subjects and serves as a middle point between NTA levels 4 and 6. The sample consisted of 48 male and 280 female students.

Secondary data, including students' coursework (CA) and end-of-semester exam (SE) scores, were collected from academic records. The final student scores were derived by summing the CA and SE scores. Academic performance was treated as the dependent variable, while gender (male or female) was the independent variable. Data processing involved computing mean and standard deviation for male and female students across core subjects, followed by Welch's t-test to assess gender-based performance differences.

Microsoft Excel and Python were utilized for statistical analysis and data visualization. Ethical considerations were upheld by maintaining strict confidentiality; personal identifiers were anonymized, and all student names were removed from the dataset.

## 4.0 Results

### 4.1 Descriptive Statistics

To get a clear overview of data and its main features, descriptive statistics are normally used (Nick, 2007). This study explores data by using mean, standard deviation, and total number of observations for each group (Males and females) and visualizes performance trends in six core subjects using box plots. This part describes the basic characteristics of the data sets without concluding.

#### 4.1.1 Gender-Based Student's Performance in Two Different Academic Years

This part describes academic performance according to gender in each subject for each year. It highlights performance trends for each gender in different years without generalization. Table 1 below displays the descriptive statistics for male and female performance in Typing Skills, Shorthand Theory, Hatimkato Nadharia, Secretarial Duties and Ethics, Computer Application Skills, and Communication and Interpersonal Skills.

**Table 1: Descriptive Statistics in Six Core Modules**

Module	Intake	Gender	N	Performance	
				Mean	SD
Typing Skills	Sept 2022/2023	Male	21	59.6	10.5
		Female	115	59.1	11.5
	Sept 2023/2024	Male	27	71.6	10.9
		Female	165	62.3	8.4
Shorthand Theory	Sept 2022/2023	Male	21	64.0	12.7
		Female	115	59.3	10.0
	Sept 2023/2024	Male	27	60.9	12.2
		Female	165	54.7	12.3
Hatimkato Nadharia	Sept 2022/2023	Male	21	71.7	11.2
		Female	115	67.2	12.0
	Sept 2023/2024	Male	27	67.4	9.8
		Female	165	62.2	12.9
Computer Application Skills	Sept 2022/2023	Male	21	69.9	6.6
		Female	115	62.7	8.0
	Sept 2023/2024	Male	27	71.6	10.4
		Female	165	62.3	8.4

Module	Intake	Gender	N	Performance	
				Mean	SD
Secretarial Duties and Ethics	Sept 2022/2023	Male	71.5	71.5	7.3
		Female	64.7	64.7	7.8
	Sept 2023/2024	Male	71.7	71.7	6.6
		Female	67.3	67.3	9.5
Communication and Interpersonal Skills	Sept 2022/2023	Male	21	67.5	7.3
		Female	115	62.8	7.4
	Sept 2023/2024	Male	27	61.7	4.5
		Female	165	61.0	5.9

**Source:** Field Data (2024)

Table 1 shows that male students scored an average performance of 59.5 as compared to an average score of 59.1 by female students in Typing Skills for the September 2022/2023 intake. Likewise, in the final examinations of September 2023/2024, males scored an average performance of 79.6 while females scored an average of 62.3. Therefore, descriptive statistics show that higher average performance trends for males in the Typing Skills subject.

For Shorthand Theory, table 1 shows that in the final examinations of Sept 2022/2023, males and females scored an average performance of 64.0 and 59.3 respectively. Also the final examinations of Sept 2023/2024 males scored an average performance of 60.9 which is larger as compared to an average of 54.7 scored by females. Therefore, the descriptive statistics favor the performance of males in Shorthand Theory as compared to the performance of females.

In Hatimkato Nadharia, males also showed higher performance trends in both intakes. For the intake of Sept 2022/2023, males scored an average performance of 71.7 while females scored an average performance of 67.2. In the examinations of Sept 2023/2024, Males also outperform females by scoring an average score of 67.4 which is 5.2 larger than the average of 62.2 performed by females. The descriptive statistics again favor performance males in Hatimkato Nadharia the same as its identical Shorthand Theory.

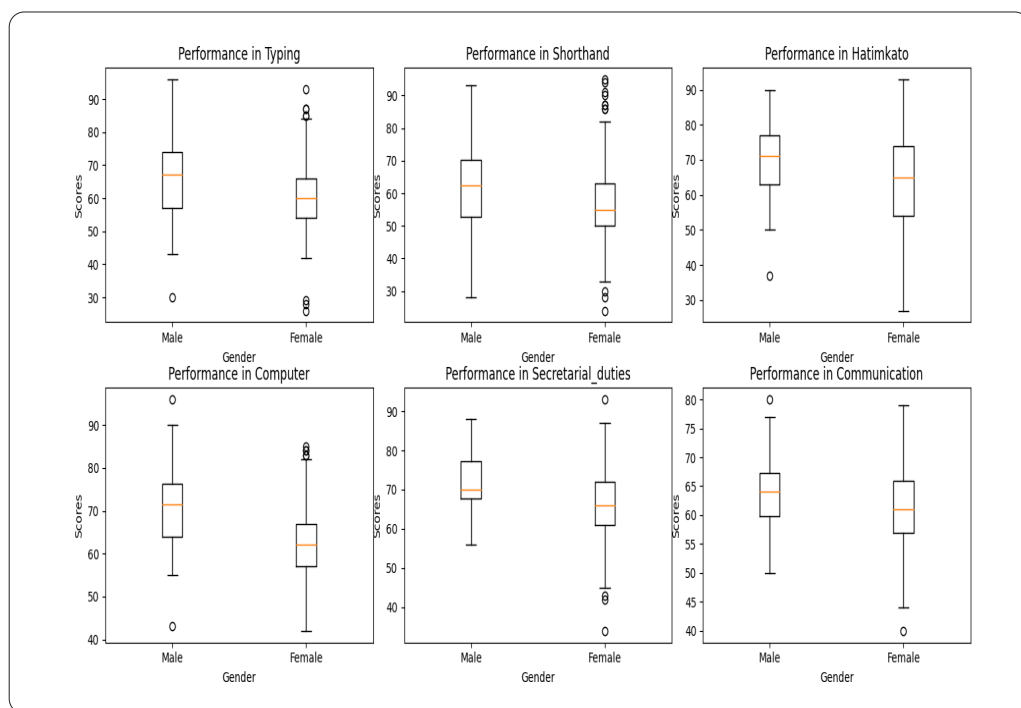
In the final examinations of Sept 2022/2023, males scored an average performance of 69.9 as compared to an average score of 62.7 by females. Also in the final examinations of Sept 2023/2024, males scored an average performance of 71.6 while females scored an average of 62.3. As in the previous subjects, descriptive statistics show higher average performance trends for males in computer applications skills.

In the final examinations of Sept 2022/2023, males and females scored an average performance of 71.5 and 64.7 respectively. Also, in the final examinations of Sept 2023/2024, males scored an average performance of 71.7 which is larger as compared to an average of 67.3 scored by females. The descriptive statistics favor the performance of males in secretarial duties and ethics as compared to the female's performance.

For the case of communication and interpersonal skills, table 3 shows that males also showed higher performance trends in both intakes. For the intake of Sept 2022/2023, males scored an average performance of 67.5 while females scored an average performance of 62.8. In the examinations of Sept 2023/2024 Males also scored an average score of 61.7 slightly larger to the average of 61.0 performed by females.

#### 4.1.2 Overall Gender-Based Students' Performance in Two Academic Years

This part shows the descriptions of overall academic performance according to gender in two academic years. Figure 4 below shows box plots that display the general performance of males and females for each subject.



**Figure 1: Box Plots showing overall performance trends (Source: Field Data (2024))**

The box plots show that the median scores of males in all subjects are higher compared to those of females which signify higher average performance. The box plots also show that there is an inconsistency of performance of females in typing skills, shorthand theory, computer skills, secretarial duties, and professional ethics as well as communication and interpersonal skills due to the presence of several outliers below or above the average of majority. Despite having high average performance still the boxes for all subjects overlap which limits the ability to draw direct conclusions by interpretation of box plots. Therefore, to conclude whether there is relationship between gender and academic performance analysis was performed and the results are displayed in section 4.2

#### 4.1.3 Association Analysis between Gender and Academic Performance

To determine if the differences in mean grades between male and female students were statistically significant an independent sample Welch's t-test was conducted for each core subject. The values of the calculated p-value were computed and compared with a significance level of 0.05 for each subject. If the value of the p-value is greater than 0.05 null hypotheses for a specific subject is accepted. Otherwise, the alternative hypothesis is accepted.

**Table 2: Welch's t-test for Six Modules**

Subject	Group	N	Mean	SD	df	t-value	p-value	Decision
Typing Skills	Male	48	66.3	12.2	3	2.871	0.064	H <sub>0</sub> - accepted
	Female	280	61.0	9.9				
Shorthand Theory	Male	48	62.3	12.4	3	2.968	0.0592	H <sub>0</sub> - accepted
	Female	280	56.6	11.6				
Hatimkato Nadharia	Male	48	69.3	10.5	2	2.993	0.0959	H <sub>0</sub> - accepted
	Female	280	64.2	12.4				
Computer Application Skills	Male	48	70.7	9.3	2	5.794	0.0285	H <sub>1</sub> - accepted
	Female	280	62.5	8.2				
Secretarial Duties and Ethics	Male	48	71.6	6.8	1	4.818	0.1303	H <sub>0</sub> - accepted
	Female	280	66.2	8.9				
Communication and Interpersonal Skills	Male	48	64.2	6.5	1	2.425	0.2485	H <sub>0</sub> - accepted
	Female	280	61.8	6.6				

**Source:** Field Data (2024)

Table 2 shows that for typing skills, the obtained calculated p-value (0.064) was compared to the significance level (0.05). Since the calculated p-value is larger than the significance level, there is not enough evidence to reject the null hypothesis. In that case, the null hypothesis was accepted meaning the absence of a significant difference in academic performance between male and female students in typing skills. The observed performance differences were not statistically significant.

Table 2 also shows that the calculated p-value for shorthand theory was 0.0592. Since 0.0592 is larger than 0.05 which is the level of significance, null hypothesis is accepted because there is insufficient evidence to reject it. Therefore, there is no significant difference in academic performance between male and female students in shorthand theory. The observed performance differences in descriptive statistics were not statistically significant.

For Hatimkato nadharia, the calculated p-value was larger than the significance level, which implies the absence of sufficient evidence to reject the null hypothesis. For that reason, the null hypothesis was accepted. Therefore, there is no significant difference in academic performance between male and female students in Hatimkato nadharia regardless of the minor performance difference observed by descriptive statistics.



Table 2 also shows the calculated p-value of 0.0285, which is less than the significance level of 0.05 for the Computer Application Skills. This implies that there sufficient evidence to reject the null hypothesis and accept the alternative hypothesis. That is, there is a significant difference in academic performance between male and female students in computer application skills. Therefore, the observed difference is statistically significant.

For the case of Secretarial Duties and Ethics, Table 3 indicates that the calculated p-value of 0.1303 exceeded the significance level of 0.05. This implied the acceptance of the null hypothesis. Therefore, there is no significant difference in academic performance between male and female students in secretarial duties and professional ethics. The variation between males and females shown by descriptive statistics is not statistically significant.

Information in table 2 shows that calculated p-value is 0.2485 which is above the significance level 0.05. Therefore, the null hypothesis was also accepted by the study. There is no significant difference in academic performance between male and female students in communication skills despite higher performance trends of males showed in descriptive statics in which males scored higher means as compared to females.

#### 4.1.4 Summary of the Key Findings

**Table 3: Key Findings**

Core Subject	Findings
Typing Skills	There is no significant difference in academic performance between male and female students in typing skills. The calculated p-value (0.064) was larger than the significance level (0.05).
Shorthand Theory	There is no significant difference in academic performance between male and female students in Shorthand Theory. the calculated p-value (0.0959) was larger than the significance level of 0.05
Hatimkato Nadharia	There is no significant difference in academic performance between male and female students in Hatimkato Nadharia. The calculated p-value (0.0959) was larger than the significance level of 0.05.
Computer Applications Skills	There is a significant difference in academic performance between male and female students in Computer Application Skills. The calculated p-value (0.0285) was smaller than the significance level of 0.05.
Secretarial Duties and Professional Ethics	There is no significant difference in academic performance between male and female students in Secretarial duties and professional ethics. The calculated p-value (0.1303) exceeded the significance level of 0.05
Communication and Interpersonal Skills	There is no significant difference in academic performance between male and female students in Communication and interpersonal skills. calculated p-value (0.2485) was above the significance level of 0.05

**Source:** Field Data (2024)

## 5.0 Findings and Discussions

The findings of this study revealed that there is a significant difference in academic performance between male and female students in Computer Application Skills, where male students outperform female students. This finding correlates with the finding of Otamiri and Ogbonda (2015) which revealed that male secretaries were better in general computer operation and word processing applications. Although Otamiri and Ogbonda (2015) compared the performance of male and female secretarial in working environments, in the current Vocational Education System, there is a direct relationship between working environments and studying environments, especially after the introduction of the competence-based education system (CBET) which intends to narrow the gap between studying and working. This finding also correlates with the study of Imhof *et al.* (2007), which revealed that males seemed to spend more time at the usage of the computer for their purposes and outperform female students in performing computer tasks, especially mastering PowerPoint presentations which is also necessary for computer skills for secretaries.

This study also revealed that there is no significant difference in academic performance between male and female students in Communication and interpersonal skills. This finding aligns with the finding of the study of Kapinga and Amani (2016) which revealed that there is no difference in performance communicational skills between males and females in general.

The findings of this study also revealed that there is no significant difference in academic performance between male and female students in Shorthand Skills, Hatimkato Nadharia and Communication Skills. This finding to some extent contradict the finding of Otamiri and Ogbonda (2015) which revealed that males are superior in covering official meetings. Covering official meetings requires several skills including communication skills and shorthand/Hatimkato skills which are performed by male and female students almost equally.

The results of this study also revealed that there is no significant difference in academic performance between male and female students in Secretarial duties and professional ethics. This finding differs from the finding of Otamiri and Ogbonda (2015) which revealed female secretaries were superior in the areas of supporting administrative tasks (supervision of staff) and management of office materials and equipment. Those are general secretarial duties skills that are academically performed equally by males and females as per the findings of this study.

Lastly, the finding of this study revealed that there is no significant difference in academic performance between male and female students in typing skills. Very little to no literature comparing the typing skills of males and females. However, typing skills are one the component skills for effective computer operations.

## 6.0 Conclusion and Recommendations

In the light of the foregoing findings and discussion, the study concludes that there is no significant academic performance between female and male students in core subjects of secretarial studies at Tanzania Public Service College, Dar es Salaam Campus except Computer Application Skills in which males seem to perform better than females. The absence of significant gender differences in the majority of core subjects of secretarial studies may indicate the effectiveness of current educational practices in Secretarial Studies, which seem to support both male and female students equally. This is a positive sign, suggesting that the learning environment in these subjects is likely inclusive and equitable. However, the notable difference in scores for Computer Application Skills points to a potential gender gap. Therefore, future studies may take into consideration the factors causing female students to underperform in Computer studies as compared to males.

This study recommends immediate interventions to Computer Application Skills, such as extra training or provision of resources for females, to promote equitable skill development in this area. Incorporating more collaborative projects in Computer Application Skills to foster participation from both genders should also be considered. This may help to close the performance gap and enhance teamwork.

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