

# Academic Achievement by Gender Based on Mid-Year Examination and 2024 SPM Trial Results in Mualim District Secondary Schools for The EmpowerNcer@Academic Program 2024

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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v14-i5/21538>

DOI:10.6007/IJARBSS/v14-i5/21538

**Published Date:** 23 May 2024

## Abstract

This study aims to analyze the differences in academic achievement by gender based on the mid-year examination and 2024 SPM trial results in a secondary school in the Mualim District, Perak, participating in the EmpowerNcer@Academic Program 2024. The study sample involves 200 students (N=75 males and N=125 females) who will be sitting for the Sijil Pelajaran Malaysia (SPM) in 2024, comprising 4 selected secondary schools: SMK Proton City, SMK Khir Johari, SMK Slim, and SMK Bandar Behrang 2020. A quantitative research method was used to collect data from school examination records. The data were analyzed using descriptive statistics. Descriptive statistics, such as graphs/charts and tables, were used to examine the percentage differences in pass and fail rates between male and female students in the mid-year examination and 2024 SPM trial based on subjects: Malay language, English language, History, Mathematics, and Science. The descriptive research findings indicate that the examination results for both examinations show that female students outperform male students in all subjects: Malay language, English language, History, Mathematics, and Science. There is an improvement in academic performance between male and female students in the 2024 SPM trial. Therefore, there is a clear view on the extent to which gender factors influence academic performance in this context. The implications of this study's findings can provide guidance to school administrators in planning more effective learning strategies for both genders. This research offers valuable guidance for school administrators to tailor more effective learning strategies to ace in the study. A part from that, this research gave impactful findings that shed light on gender disparities in academic performance, providing essential information for educators to enhance learning outcomes for all students.

**Keywords:** Academic Achievement, Gender, Mid-Year Examination, 2024 SPM Trial Examination, Secondary School, Mualim District Perak, EmpowerNCER@Academic Program 2024, Statistical Analysis.

## **Introduction**

Academic achievement by gender in Malaysia has been a significant focus of research in recent decades. This research is important to understand the dynamics and issues related to gender equality in the country's education system. According to a study by Kaur and Sidhu (2018), there are different patterns of academic achievement between males and females at all levels of education, from primary school to higher education. The study indicates that although females often excel in secondary school examinations, males tend to achieve higher performance in certain fields such as mathematics and science. However, a study by Lim (2020) suggests that this gap is narrowing at the higher education level, with more female students successfully completing their studies compared to males.

Furthermore, research conducted by Azman et al (2019) indicates significant differences in academic achievement between males and females at the higher education level. The study results show that although more female students enroll in and complete higher education, males tend to achieve higher performance in specific fields such as science and engineering. Additionally, a study by Rashid et al. (2020) highlights the role of socio-economic factors in influencing gender-based academic performance in Malaysia.

Data analysis from the State Education Department (JPN) in 2023 reveals differing performance patterns between male and female students in examinations. According to Zalizan et al (2014), the academic performance of female students tends to be better than male students in subjects such as Malay Language, Science, and History. This may be attributed to females' inclination towards verbal and humanities aspects in learning. Moreover, studies also suggest that male students may perform better in technical and mathematical subjects, reflecting their interests and inclinations in these fields. Male students' performance shows significant improvement in subjects such as Mathematics, Physics, and Engineering compared to female students, indicating their sustained interest and achievement in science and technology.

Factors associated with why female students outperform male students include claims that teaching and testing methods favor females. Research findings also suggest that females are more positive and pay more serious attention to schoolwork compared to males (Dwyer, 1974; Halpern, 1992). Females also demonstrate better reading interests (McKenna, 1997). Picou & Gatlin (1998) state that male and female students also utilize different learning methods.

However, the academic achievement gap between males and females in these examinations requires serious attention. It raises issues of gender equality in education and the need to identify appropriate learning strategies and support for both genders to ensure equitable academic achievement.

In facing this reality, it is important to recognize the social and cultural factors influencing gender-based academic performance. These factors include gender stereotypes,

societal perceptions of the abilities of males and females in specific fields, and family support in choosing academic fields. Therefore, steps need to be taken to reduce gender gaps in academic achievement, including encouraging interest in less favored fields by one gender, providing equitable educational support, and ensuring fair access to educational opportunities.

In this regard, the empowerNCER Academic Program @ Perak is a program that provides holistic education to students who will sit for the Sijil Pelajaran Malaysia (SPM) to enhance the academic performance of weak students to excel in academics and self-development skills to create a more balanced society. The program under the auspices of the Northern Corridor Economic Region (NCER) involves selected secondary schools in states such as Perlis, Kedah, Pulau Pinang, and Perak and has been implemented since 2020 until now.

### **Research Objective**

To enhance this study, a few objective is stated

1. Identifying patterns and trends of performance differences among male and female students in the mid-year examination and 2024 SPM trial based on subjects: Malay language, English language, History, Mathematics, and Science.
2. Identifying the percentage of pass and fail rates among male and female students based on subjects: Malay language, English language, History, Mathematics, and Science.

### **Research Question**

1. What are the patterns and trends of performance differences among male and female students in the mid-year examination and 2024 SPM trial based on subjects such as Malay language, English language, History, Mathematics, and Science?
2. What are the pass and fail rates among male and female students based on subjects such as Malay language, English language, History, Mathematics, and Science?

### **Methodology**

The research design in this study is crucial in establishing the structure and methodology of the research. Therefore, this study adopts a quantitative, descriptive approach to assess academic performance by gender based on the mid-year examination and 2024 SPM trial results in selected secondary schools in the Mualim District, Perak, participating in the EmpowerNCER program. The researcher utilizes secondary data obtained from selected secondary schools in the Mualim District participating in the EmpowerNCER@Academic Program in Perak.

### **Population and Sampling**

The study sample consists of 200 students, with 75 males and 125 females, who will be sitting for the Sijil Pelajaran Malaysia (SPM) in 2024. These students are from four selected secondary schools participating in the study: SMK Proton City, SMK Khir Johari, SMK Slim, and SMK Bandar Behrang 2020. As per Creswell (2014), the quantitative approach is suitable for uncovering the meaning behind numerical data collected.

## **Findings**

### **Socio-Demographic Characteristics of Participants**

For socio-demographic findings, two variables have been identified: (i) gender and (ii) region. presents the number and percentage of socio-demographic characteristics (gender) selected for this study. The findings based on gender reveal that the number of females is higher compared to males, with females (N=125, 62.5%) and males (N=75, 37.5%). Overall, a total of 200 high school students taking the 2024 Sijil Pelajaran Malaysia (SPM) examination in the Mualim region were included based on selected schools and participation in the 2024 Empowerncer program.

### **Socio-Demographic Characteristics of Participants (Schools)**

For socio-demographic findings based on schools, the following distribution was observed:

- SMK Slim had the highest number of students compared to other schools, with (N=61, 30.5%).
- SMK Khir Johari ranked second in terms of student population, with (N=52, 26%).
- SMK Bandar Behrang 2020 had (N=50, 25%) students.
- SMK Proton City had the lowest number of students, with (N=37, 18.5%).

Overall, four high schools in the Mualim region were selected for participation in the Empowerncer@Akademik program and taking the 2024 Sijil Pelajaran Malaysia (SPM) examination.

### **Identifying patterns and trends of performance differences among male and female students for the mid-year examination and the SPM 2024 trial based on the subjects of Malay, English, history, mathematics and science)**

The secondary data analysis is used to address the first research question, which is to determine the patterns and trends of performance differences among male and female students in the mid-year and SPM trial examinations of 2024 based on the subjects of Malay Language, English Language, History, Mathematics, and Science. Based on Table, an analysis of male and female students' performance in the mid-year examination leads to several conclusions.

Overall, female students achieved a higher percentage of passing grades compared to male students in almost all subjects in both the mid-year and SPM trial examinations of 2024. The examination results for both tests indicate that female students outperformed male students in all core subjects, namely Malay Language, English Language, History, Mathematics, and Science. The difference in the percentage of passing grades for both examinations in each subject is approximately the same, ranging from 5 to 30 percent. Meanwhile, the difference in the percentage between male and female students ranges from 1 to 20 percent (Refer to Figures 1 and 2).

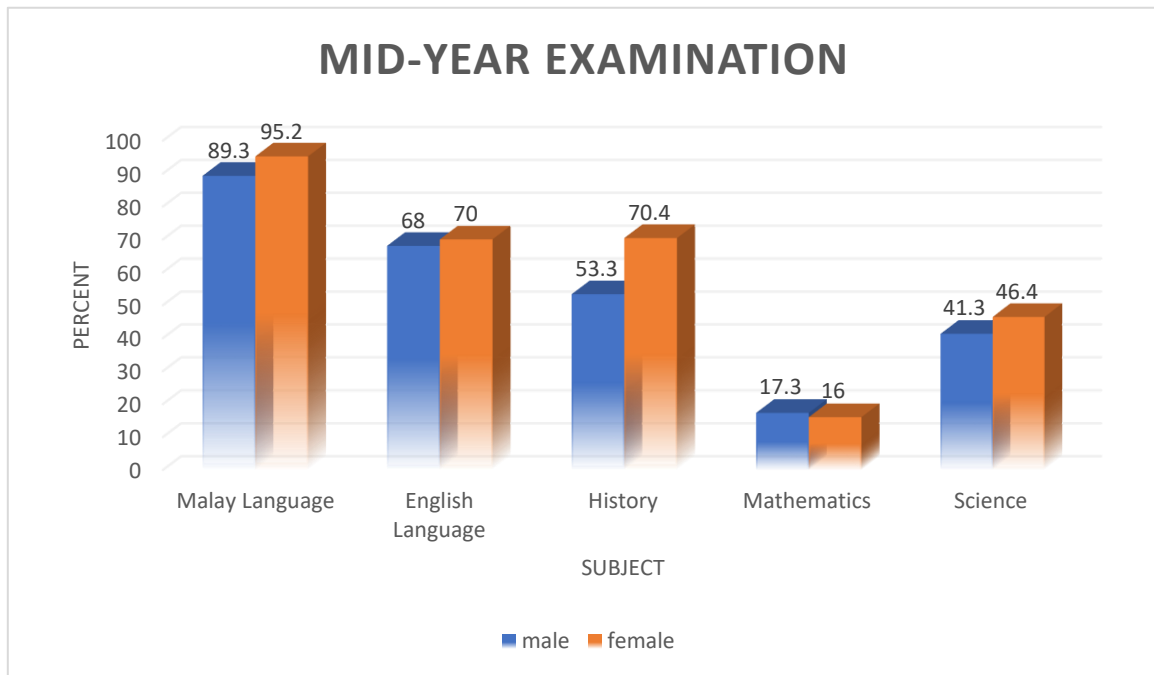


Figure 1. Percentage of student passing rates for mid-year examination

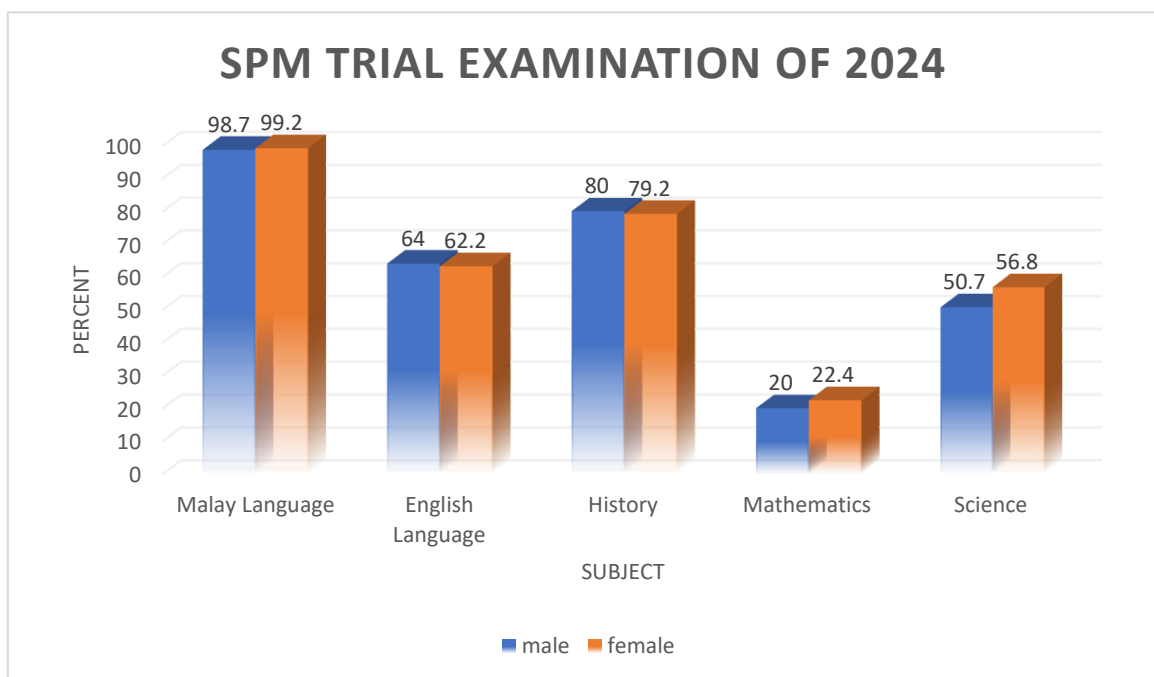


Diagram 2. The percentage of student pass rates for the SPM 2024 trial examination

Identify the percentage of male and female students passing and failing in subjects such as Malay Language, English Language, History, Mathematics, and Science.

The findings indicate that female students outperformed male students in almost all subjects in the mid-year examination. The mid-year exam results show that female students excelled over male students in subjects such as Malay Language, English Language, History, and Science. However, in Mathematics, the percentage of male students performing better and slightly surpassing female students.

Nevertheless, Mathematics and Science subjects exhibit a high percentage of failure for both genders, exceeding the passing percentage. In Mathematics, the failure rate for male students was 82.2% and for female students was 84%. Whereas in Science, it was 58.7% for male students and 53.6% for female students. Overall, the failure percentage for Mathematics and Science subjects exceeds 50%.

Subject	N	Gender	Mid-Year Examination	Mid-Year Examination
			Pass %	Fail %
Malay Language	200	L	89.3 %	10.7%
		P	95.2%	4.8%
English Language	200	L	68%	32%
		P	70.4%	29.6%
History	200	L	53.3 %	46.7%
		P	70.4%	29.6%
Mathematics	200	L	17.3%	82.2%
		P	16%	84%
Science	200	L	41.3%	58.7%
		P	46.4%	53.6%

\*The number of samples taking science subjects according to school regulations. A total of 23 individuals either did not take science subjects or took Pure Sciences (Biology, Physics, and Chemistry).

### Diagram 3. Percentage of pass and fail in mid-year examinations

For the SPM 2024 trial examination, the pass rate for both male and female students has increased in all subjects compared to the mid-year examination. Female students have achieved better results than male students in almost all subjects, namely Bahasa Melayu, Mathematics, and Science. However, male students have performed better and slightly surpassed the pass percentage of female students in English and History subjects.

Nevertheless, there has been a significant improvement in the pass percentage for Mathematics and Science subjects compared to the mid-year examination. The pass rate for both male and female students in the Science subject has reached 50 percent or above from before. Meanwhile, there has been an increase in the pass rate for Mathematics among male and female students, but it has not yet reached 50 percent or above.

Subject	N	Gender	Mid-Year Examination	Mid-Year Examination
			Pass %	Fail %
Malay Language	200	L	98.7%	1.3%
		P	99.2%	0.8%
English Language	200	L	64%	36%
		P	63.2%	36.8%
History	200	L	80%	20%
		P	79.2%	20.8
Mathematics	200	L	20%	80%
		P	22.4%	77.6%
Science	200	L	50.7%	49.3%
		P	56.8%	43.2%

\*The number of samples taking science subjects according to school regulations. A total of 23 individuals either did not take science subjects or took Pure Sciences (Biology, Physics, and Chemistry).

### Diagram 4. Percentage of pass and fail in the SPM 2024 trial examination.



**Conclusion**

In general, the study findings indicate that female students outperform male students in examinations. Several factors have been associated with this phenomenon, including the role of teachers contributing to such conditions. Additionally, the environment is also a priority that can enhance students' performance. Parental responsibility also plays a crucial role in improving students' academic performance at school.

In discussion, overall, research findings show that female students achieve better exam results than male students in almost all subjects, including Bahasa Melayu, English, History, and Science in both the mid-year and SPM 2024 trial examinations. However, male students excel in the Mathematics subject and outperform female students. According to Siti Nafias (2021), the academic performance of female students tends to be better in some areas such as languages and humanities, while males tend to excel in science and mathematics. Other factors such as family environment, educational support, personal interest and motivation, as well as school environment, also play significant roles in academic performance.

Female students possess more learning skills and strategies that aid the learning process and preparation for their exams compared to male students (Zalizan & Saemah, 2005). Therefore, teachers need to play a role in assisting male students in improving their learning skills and strategies. Female students have clearer aspirations and educational visions. This suggests that male students need assistance in shaping clearer aspirations and educational visions. The maturity level of male and female students also differs. Hence, teachers need to implement systematic teaching and learning that consider the diversity of approaches, methods, techniques, activities, and materials to meet the diversity of students' needs. Extracurricular activities in schools also need to be enhanced in their effectiveness to engage male students more. Thus, these extracurricular activities can help build clearer aspirations and visions among male students.

In terms of family control, according to Anjani et al (2022), parents tend to control female students more than male students. This results in female students having more space and opportunities to spend their time studying at home and focusing on their studies. Meanwhile, male students have more space to spend time playing with friends due to less control exerted by their families. It is clear that families need to play a role in controlling the activities of male students so that the freedom given is controlled freedom. Parents need to be exposed to changes in values and social issues today. Parents need to nurture their children more systematically so that they do not neglect their children's education.

The environment is also a priority for students in academic improvement. According to Rahman et al (2023), male and female students have different reactions to the school environment and teaching styles of teachers. Male students are more likely to take inappropriate actions such as skipping school compared to female students. Teachers should be aware that problem-solving skills among male students differ from those of female students. Therefore, schools, especially counselors, should play a crucial role in helping students solve problems, especially male students, so that they do not take actions that harm themselves.

Lastly, the EmpowerNcer@Akademik program in 2024 was implemented to assist students' academic and infrastructural needs in schools. After implementing this program to students involved in the Mualim district schools, research findings have shown an increase in the pass rate of male and female students in the SPM 2024 trial examinations compared to the mid-year examinations. Therefore, this program has helped to some extent in improving students' academic achievements and should be continuously implemented. Besides that,

this research offers valuable guidance for school administrators to tailor more effective learning strategies to ace in the study. A part from that, this research gave impactful findings that shed light on gender disparities in academic performance, providing essential information for educators to enhance learning outcomes for all students.

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