

# SEC Maltese 2015: An Analysis

## Introduction

The aim of this report is to analyse how candidates perform in the different parts of the Maltese SEC examination and how candidates' gender and school sector might affect achievement in the different components making up the SEC Maltese examination. The analysed data is limited to the May 2015 session and to candidates who were not absent for any of these components.

Table 1: Distribution of Candidates by Gender and School Sector

		Paper Choice		Total	Percentage
		Paper IIA	Paper IIB		
Gender	Male	1007	968	1975	49.0
	Female	1283	769	2052	51.0
School Sector	State	871	1078	1949	48.4
	Church	1168	261	1429	35.5
	Independent	181	108	289	7.2
	Post Secondary	5	92	97	2.4
	Private Candidate	65	198	263	6.5
<b>Total</b>		<b>2290</b>	<b>1737</b>	<b>4027</b>	

As commented in the Statistical Report (MATSEC Support Unit, 2016), most candidates for SEC examinations are female. Also, most candidates originate from State schools. Most candidates opt to sit for Paper IIA, which is the more challenging option, although candidates from state schools are more likely to opt for Paper IIB, which is the easier option. Candidates registering as private candidates and coming from post-secondary institutions were not included in the analysis comparing differences between sectors.

The SEC Maltese examination is divided into two papers: Paper I and Paper II. Paper II concerns Maltese literature while Paper I is itself divided into two parts: an oral component composed of reading, listening and discussion exercises, and a written component. For the purposes of this report, candidates' marks will be divided as

- i. Oral component;
- ii. Paper I (excluding the oral component); and
- iii. Paper II.

In many instances, Paper IIA and Paper IIB candidates are analysed separately since Paper II differs for these candidates.

One should note that this report presents average candidates' difference between achievements. Candidates' average marks are not shown. All average differences were checked for statistical significance using a two-tailed T-test with equal variances assumed and an alpha of 0.05. This test is used to compare means in order to assess whether differences have occurred by chance or whether these are statistically significant.

## Achievement in the Different Components

On average, candidates perform best in the Oral component and worst in Paper II. In both cases, the percentage difference (calculated after marks for the Oral component and for written Paper I component were converted to percentage marks) is considerably large. This observation holds true for candidates obtaining Grades 1 -3 and Paper IIB candidates obtaining Grades 6, 7 or U. This observation also holds true for all of state, church and independent school candidates (only the results of Paper IIA candidates were used for this analysis). However, the differences for independent school candidates, especially between the oral component and the written papers, is smaller than that for candidates from other school sectors. This information is summarised in the table below.

Table 2: Difference between Attainment in the Different Components

		Difference	T-test
<i>Paper II A</i>	Oral – P1	23.9	t(4552) = 68.0, p < 0.0001
	P1 – P2	10.9	t(4552) = 27.7, p < 0.0001
<i>Paper IIB</i>	Oral – P1	27.9	t(3256) = 54.3, p < 0.0001
	P1 – P2	6.5	t(3256) = 11.3, p < 0.0001
<b>Grades 1, 2, 3</b>			
<i>Grades 1, 2, 3</i>	Oral – P1	19.3	t(2068) = 48.3, p < 0.0001
	P1 – P2	7.9	t(2068) = 21.9, p < 0.0001
<i>Grades 6, 7, U</i>	Oral – P1	31.3	t(1918) = 51.6, p < 0.0001
	P1 – P2	10.8	t(1918) = 19.4, p < 0.0001
<b>State Schools</b>			
<i>State Schools</i>	Oral – P1	24.7	t(1722) = 45.6, p < 0.0001
	P1 – P2	11.7	t(1722) = 17.5, p < 0.0001
<b>Church Schools</b>			
<i>Church Schools</i>	Oral – P1	23.9	t(2332) = 50.9, p < 0.0001
	P1 – P2	10.5	t(2332) = 20.3, p < 0.0001
<b>Independent Schools</b>			
<i>Independent Schools</i>	Oral – P1	17.7	t(360) = 13.8, p < 0.0001
	P1 – P2	9.4	t(360) = 7.3, p < 0.0001

### Correlations between Different Components

In the Oral component, most candidates scored 12, 13 or 14 marks. Few candidates (14.4%) scored lower than 10 marks and no candidate scored less than 3 marks. The distribution of candidates' marks is shown in the figure below.

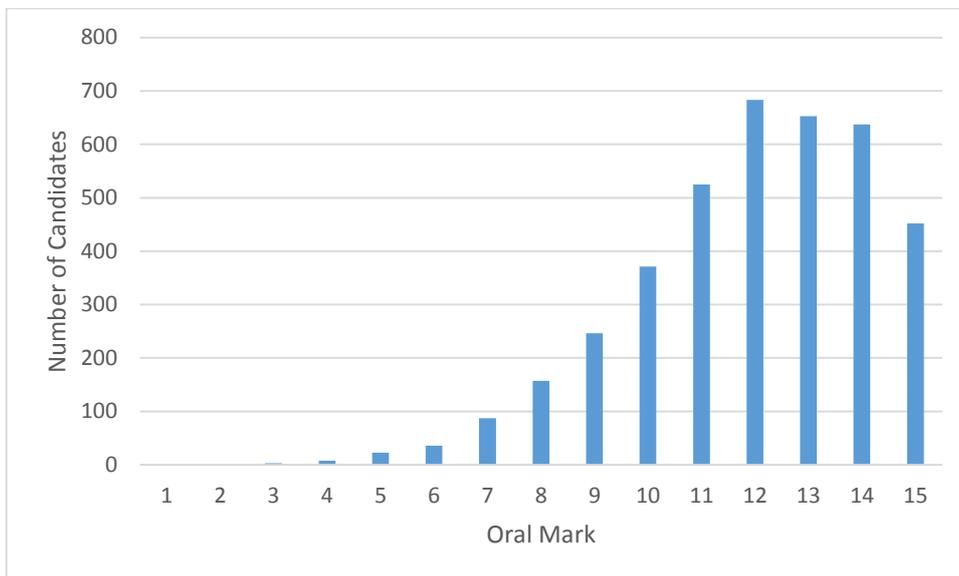


Figure 1: Candidates' Achievement in the Oral Component

The correlation between marks for the Oral component and Paper I (written) is of a medium strength of 0.49. An XY Scatter plot is shown in Figure 2 (candidates' marks for Paper I are not shown in this diagram). However, one cannot fail to notice a considerable number of candidates who albeit scoring full marks in the Oral component fare relatively very poorly in Paper I. In addition, a considerable number of candidates fared relatively well in Paper I but relatively poorly in the Oral component.

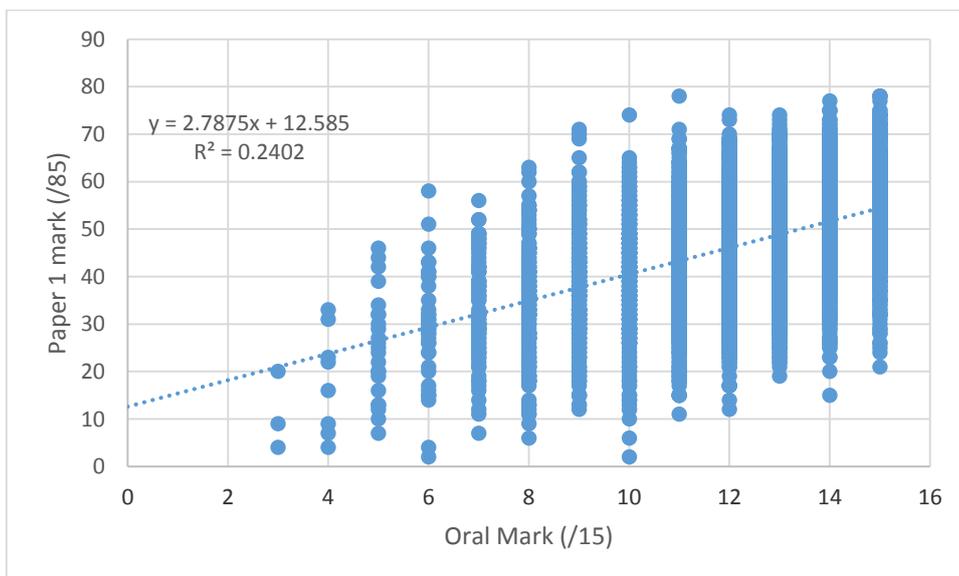


Figure 2: Candidates' Achievement in Paper I (written) vs Achievement in the Oral Component

For both Paper IIA and Paper IIB candidates, there is a correlation ranging between 0.32 to 0.38 between the Oral component and either of achievement in Paper I and Paper II. The correlation between Paper I (written) and Paper II is much higher – 0.61 for Paper IIA candidates and 0.65 for Paper IIB candidates. Values for correlation are shown in the table below.

Table 3: Correlations between Candidates' Achievements in the three Components of SEC Maltese

	Oral	Paper I	Paper II	
<b>Oral</b>	1.00	0.32	0.33	<b>Paper IIA</b>
<b>Paper I</b>	0.38	1.00	0.61	
<b>Paper II</b>	0.35	0.65	1.00	
	<b>Paper IIB</b>			

### Gender Differences

Female candidates, both from Paper IIA and Paper IIB choices, outperform male candidates in both Paper I and Paper II. In the oral component, however, the difference between males and females is only observed amongst Paper IIB candidates. Values for the difference (Females - Males, F - M) and results for T-test (two-tailed, assuming equal variance) are shown in the table below showing that all differences are statistically significant.

Table 4: Gender Differences in the 3 Components

		Difference (marks) (F - M)	T-test
<i>Paper IIA Candidates</i>	Oral	0.0	Not significant
	Paper I	3.1	t(2050) = 7.3, p < 0.001
	Paper II	5.4	t(2260) = 8.7, p < 0.001
<i>Paper IIB Candidates</i>	Oral	0.3	t(1617) = 2.7, p < 0.01
	Paper I	2.7	t(1617) = 4.6, p < 0.001
	Paper II	6.6	t(1617) = 7.2, p < 0.001

### School Sector Differences

In the Oral component, Paper IIA candidates coming from church schools (C) outperform state school candidates (S) (difference = 0.5 marks, t(2013) = 5.4, p < 0.001) who in turn outperform independent school candidates (I) (difference = 0.5 marks, t(1035) = 3.4, p < 0.001). For Paper IIB candidates this trend is not fully maintained, as the difference between church and state school students is not statistically significant. However, that between state school and independent school students is (difference = 0.9 marks, t(1116) = 3.8, p < 0.001).

For the written papers, the tides tend to turn. Differences between church and independent school candidates are not statistically significant for both Paper IIA and Paper IIB candidates in both of Paper I and Paper II. However, the lowest achieving of these always outperforms state school candidates with a difference that is statistically significant. Values for the difference and results for T-test (two-tailed, assuming equal variance) are shown in the table below.

Table 5: School Sector Differences in Paper I and Paper II

		Difference		T-Test
<i>Paper IIA Candidates</i>	Paper I	I - S	2.9	t(1035) = 3.5, p < 0.001
	Paper II	C - S	5.0	t(2013) = 7.3, p < 0.001
<i>Paper IIB Candidates</i>	Paper I	C - S	2.4	t(1259) = 2.9, p < 0.01
	Paper II	I - S	9.9	t(1116) = 4.6, p < 0.001

## Conclusion

This report shows that candidates performed best in the oral component of the SEC Maltese 2015 examination and worse in Paper II. These observations held true regardless of paper choice, achievement, and school sector. Female candidates outperformed male in nearly all components of the 2015 SEC Maltese examination. This is in line with observations made in the MATSEC Support Unit's (2016) statistical report which shows that, year after year, more female rather than male 16-year olds qualify for entry in post-secondary academic institutions. When results of candidates are analysed by school sector, the data suggests that independent school candidates are outperformed by other candidates in the oral component while state school candidates are outperformed by other candidates in both Paper I and Paper II.

This report is unable to propose explanations for these observations. It is also unable to confirm whether these observations are present in other years of the same examination and in other language subjects at different levels. Further research on any of these is to be recommended, and interested researchers are reminded of the MATSEC Support Unit's accessibility for these purposes.

## References

MATSEC Support Unit (2016). MATSEC Examinations Board SEC Examinations 2015: Statistical Report. Retrieved from [http://www.um.edu.mt/\\_data/assets/pdf\\_file/0004/271273/SECStatisticalReport2015.pdf](http://www.um.edu.mt/_data/assets/pdf_file/0004/271273/SECStatisticalReport2015.pdf)