

Modern Foreign Languages in Irish Secondary Schools

Pauline Stach

x18177123@student.ncirl.ie

National College of Ireland

Module: Data Visualization



The Report

1 The Domain	1
2 The Dataset	2
3 Visuals	3
4 Infographic	6
5 Insights	8
5.1 Total Number of Students in Irish Secondary Schools per County 2019	9
5.2 Percentage of Students per Subject. Number of Schools and Students per Subject	10 10
5.3 Development of Student Proportions per Subject	11
5.4 Comparison: Number of Students and Schools per Subject in JC/LC	13
5.5 Regression: Student Numbers in JC/LC per Subject	15
5.6 Gender: Numbers of Girls and Boys Doing a MFL in Their JC/LC	16
6 Conclusion	18

The Domain

A language institute in Dublin is interested in the numbers of modern foreign language (MFL) learners in Ireland. As part of their education strategy, they want to find out about MFL learners specifically in Irish secondary schools. The four main MFLs in Ireland which the report will focus on are French, German, Spanish and Italian. Apart from this, schools offer Polish or Russian (in the Junior Cycle (JC)) as well as Scandinavian languages, modern Greek, Latvian, Slovenian, Portuguese or Japanese (in the Leaving Certificate (LC)).

Their objective is to get an overview of schools that offer foreign languages, students and also the development of student numbers over time in order to initiate language supporting projects and predict future student numbers for their own business. Since the language institute offers German language courses for children, secondary school students as well as adults on all levels, they want to be able to see how German is manifested in secondary schools in comparison to other foreign languages. One of their assumptions is that German gained in popularity in schools for two major reasons:

- 1) Ireland's economy is growing and many international businesses ask for foreign language speakers. With Germany as one of the largest economies in Europe/world wide, German is a high demand skill on the job market.
- 2) Secondly, third level study opportunities in German speaking countries are popular because they are basically free of charge. Also, living is more affordable in many German cities which could be a reason why secondary school students consider studying abroad as a good solution to rising living prices in Ireland.

In general, it appears to be challenging to find numbers on language learners across different institutions in Ireland. Neither the department of education and the German teachers association nor the official language institutes in Dublin (for French, German, Spanish and Italian), which should be a contact point in that matter, have a directed overview of schools, other language course providers, teachers and students. Therefore, the aim of this report is to start at the secondary education level, since this is where most MFL learning initiatives start. Based on this, other areas such as third level education or private language course providers could be investigated and added to the results.

The Dataset

The dataset was sourced from the homepage of the *Central Statistics Office* (CSO) (<https://cso.ie/en/index.html>), which is the statistical agency responsible for the gathering of information relating to economic, social and general activities and conditions in Ireland. Under *Education Statistics* and *Second Level and Further Level Education*, there are 13 datasets that encompass information such as numbers of schools, their location, student numbers, age, gender and nationality, teachers and subjects. The report focuses on two datasets:

- 1) EDA85 Junior Certificate Programme Subject Provision and Take Up by Type of School, Statistic, Year and Junior_Certificate
 - JC Whole Dataset: 17 columns, 10755 rows
 - Final Version Name: JC LC Edit
- 2) EDA86 Leaving Certificate Programme Subject Provision and Take Up by Type of School, LCP Subject, Year and Statistic
 - LC Whole Dataset: 17 columns, 15787 rows
 - Final Version Name: JC LC Edit

Both datasets were edited in terms of preselection of relevant attributes on the CSO website and downloaded. They were further cleaned and analysed in excel. Missing values were replaced, i.e. there was one missing value in *German, 2011, Schools providing Subject, Junior Cert*, which could be calculated by adding up three subcategories. The final attributes that were generated from both datasets were:

- 1) Subject: Levels: French, German, Spanish, Italian
- 2) Year: Levels: 2006-2019
- 3) School Form: 16 different levels
- 4) JC Numbers: 0 - 115921
- 5) LC Numbers: 1 - 60284

Also, two additional datasets were used to add information about school numbers (County Schools Edit) and gender of students (Gender Edit).

Visuals

Layout

The layout chosen for this report is vertical A4 format. This format provides enough space for headline and text together with graphics on one page and captures all relevant information in one. The headline's space and size allows for immediate orientation over the sections in the document. Also, this sectioning is supported by the coloured bar at the bottom of the page, where each section is assigned a colour. The pages including graphical elements emphasise those but also give space for explanatory text.

Colours

The colour choices are based on the corporate design of the 'client' (German Language Institute). It gives enough variety to assign colours to each different section of the report as well as the different values in the graphical elements. The theoretical text-based sections have a moderate and calm background colour, whereas the more informative sections like the Title, Infographic and Insights have more eye-catching colours. The colours give a modern touch to the report's content, being modern foreign languages, especially the bright colours of *violet*, *light green*, *orange* and *light blue*. Rather moderate colours like *dark blue*, *beige*, *dark green*, *brown* and *grey* are a good contrast to this.

The colours for the main graphical categories of the four languages French, German, Spanish and Italian are taken from this described colour range but furthermore refer to the countries' 'national' colours, which are most representative. French is assigned to dark blue (flag, 'allez les bleus'), Italian is light green (flag, food/basil/pesto/...), Spanish is orange (warm) and German is violet (one of the remaining colours that is strong enough to appear together with the previous three colours).

Fonts

The fonts are also taken from the client's corporate design. The sans-serif is clear and concise, easy to read and matches the modern topic of the report. *Verdana* was used instead of the corporate typeface *Text FF Clan*, to avoid copy right issues.

Text FF Clan

Verdana

Visuals

Graphics

The Insight section contains visual elements such as maps, pie charts, bar charts and 'line' charts.

Map

Introduction to the overall topic of modern foreign languages in secondary schools in **Ireland**. The viewer is directly pointed towards the regional frame and can easily see which counties have which amount of schools and students due to the supportive colour graduation from dark to light blue.

Pie Chart

Pie charts are a good way to illustrate proportions. In order to see, which languages are most popular in Ireland, this graphical element is ideal, because the viewer can easily see proportions like halves, or quarters. It is also used to show the development of proportions which is easy to see in increasing and decreasing pie slices.

Bar Chart

Bar charts are used to compare student and school numbers for the two categories of Junior and Leaving Cert. They are a good method of comparing the two latter values next to each other (in the same colour) and further comparing it to the same values of different categories (French, German, Spanish, English). Without reading the scales, it is easy to see that French has the highest numbers and how it is related to the different languages.

Also the regression graphic is a bar chart but visualised with lines instead of bars. This line, together with a colour gradient from light to dark green, shows the difference/regression between both values.

Bubble Chart

A bubble chart is used as a supportive graphic to illustrate the difference in sizes.

Line Chart

Line charts are used for two different topics in this report in order to show time development. Both times, the lines were replaced by single value icons that match the values they are representing:



Schools



Students



Girls



Boys

Visuals/Infographic

The infographic stays within the same colour range as the report and Tableau visualisations and mostly presents student numbers for each subject from different points of view. The main/background colour was supposed to be bright and striking and was realised in orange (#E56300). Since the report used this colour to illustrate the subject of Spanish, this colour was then changed to beige (#C7B886), which was closest related in the colour pallet. Next to the colour coding, the countries' flags should provide the viewer with a quick orientation. They also give some kind of frame to the headline of the infographic. The font was chosen similarly to the one used in the report in order to have consistent design.

The infographics presents its information from top to bottom, starting with general student numbers for secondary schools in Ireland which is supported by the map of Ireland in the background. Also, a big pie chart illustrates one of the most important and easiest to understand information, namely that more than half of the students in Irish secondary schools study French. It further focuses on the development of student numbers from 2006 to 2019, presented by a line chart. This chart was not meant to present detailed information/numbers, but rather gives an idea of the general tendency for each language. A natural line describing the Italian student numbers, divides the upper and lower part of the infographic. The lower part focuses on the decrease of student numbers from the Junior to the Leaving Cert per subject (bar chart) and finally concludes with the differentiation of boys and girls in language learning. This information is presented in different sized people icons (male and female) which have the same height as the original bars for the percentages.

Large numbers are consistently presented in a larger font.

Infographic

Modern Foreign Languages in Irish Secondary Schools

Spanish

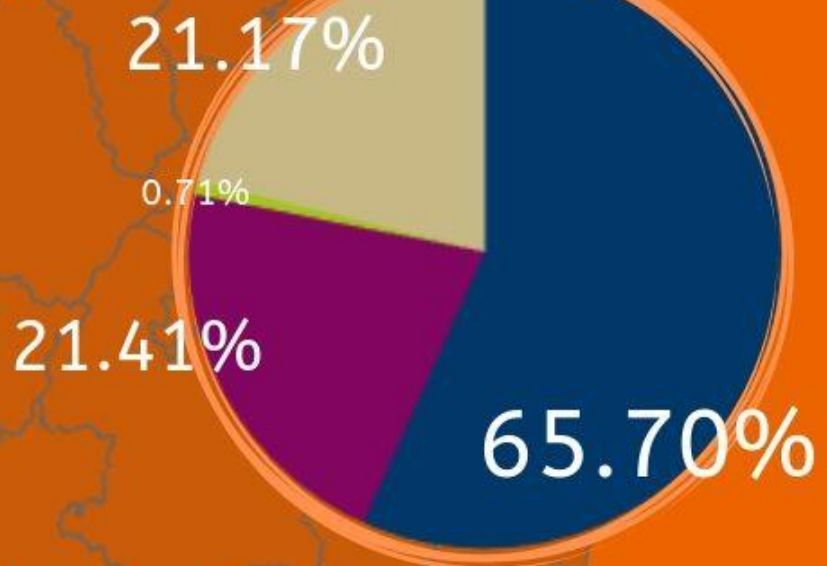
French

German

Italian

In 2019, there are 713,300 students in secondary school taking either Spanish, French, German or Italian

French is the most popular language in Irish secondary schools



BUT

The numbers are decreasing

2006

2019

German is gaining slightly

Spanish is on the rise

Italian is steady in last position

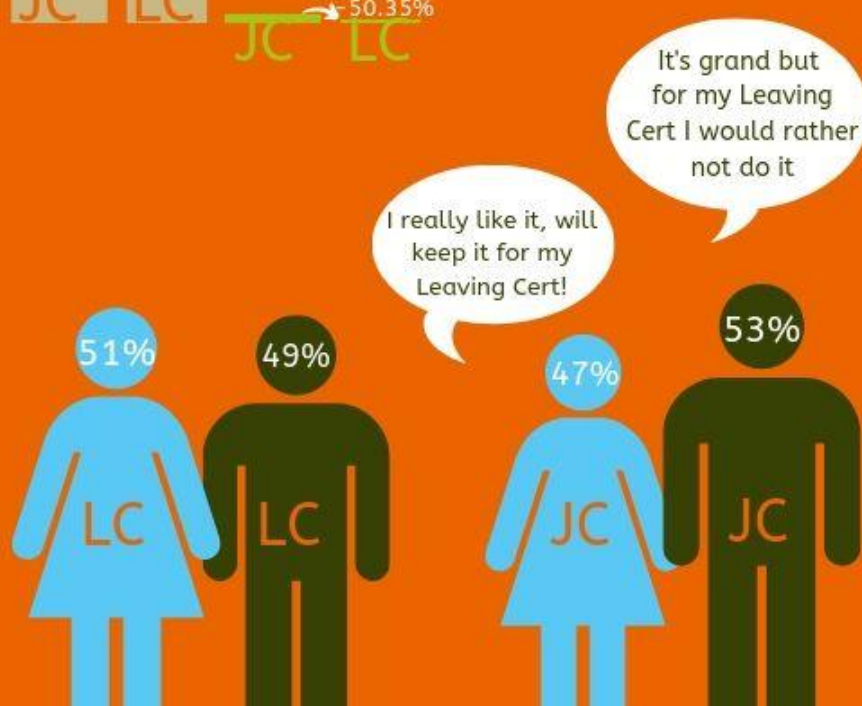


All subjects show a massive loss of students from the Junior to the Leaving Cert

German is the biggest loser with an average of -57.55%

In the Junior Cert, more boys study languages whereas more girls do languages in their Leaving Cert

53.07% of the boys and only 46.59% of the girls drop their language after the Junior Cert



Insights

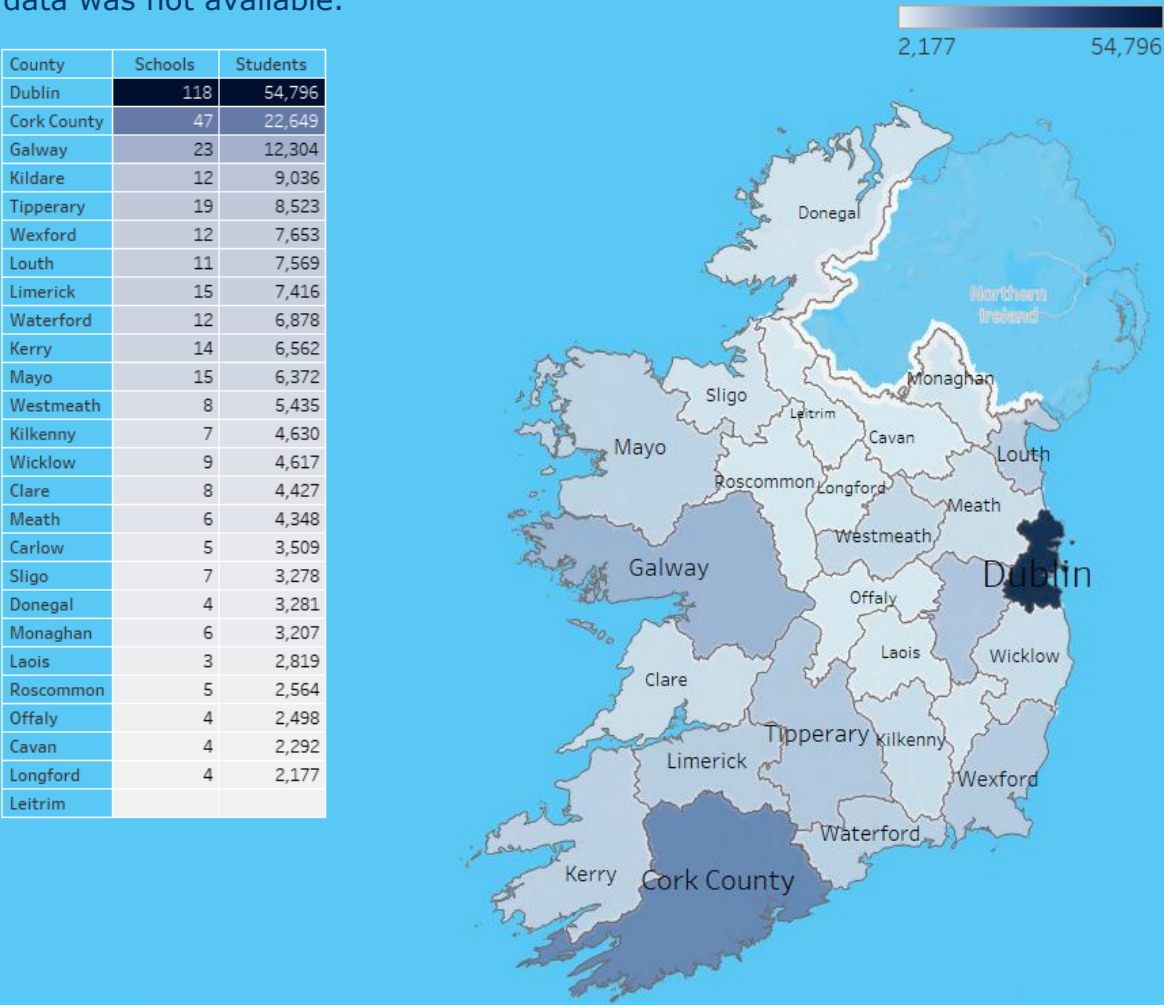
This section contains information on four main topics of interest:

- 1) Student numbers/proportions per subject (French, German, Spanish, Italian) and their development between 2006 and 2019
- 2) Number of students and schools per subject for the Junior and Leaving Cert
- 3) Development of student numbers from Junior Cycle to Leaving Cert
- 4) Gender in MFL learning

Total Number of Students in Irish Secondary Schools per County 2019

As a starting point, this map of the Republic of Ireland shows the number of schools and students per county. The different shades of blue mark the range of student numbers from 2,177 in Longford (light blue) to 54,796 in Dublin (dark blue). The different label sizes show counties with few secondary schools like Laois (small) and many school like, again, Dublin (big). The dataset was missing values for County Leitrim. Also, it appears that it does not include all public secondary schools in general. However, it can serve as an indicator for high/low school numbers and student populations.

This data represents the total number of students in secondary schools and not only those taking any of the four languages in question. Unfortunately, such data was not available.



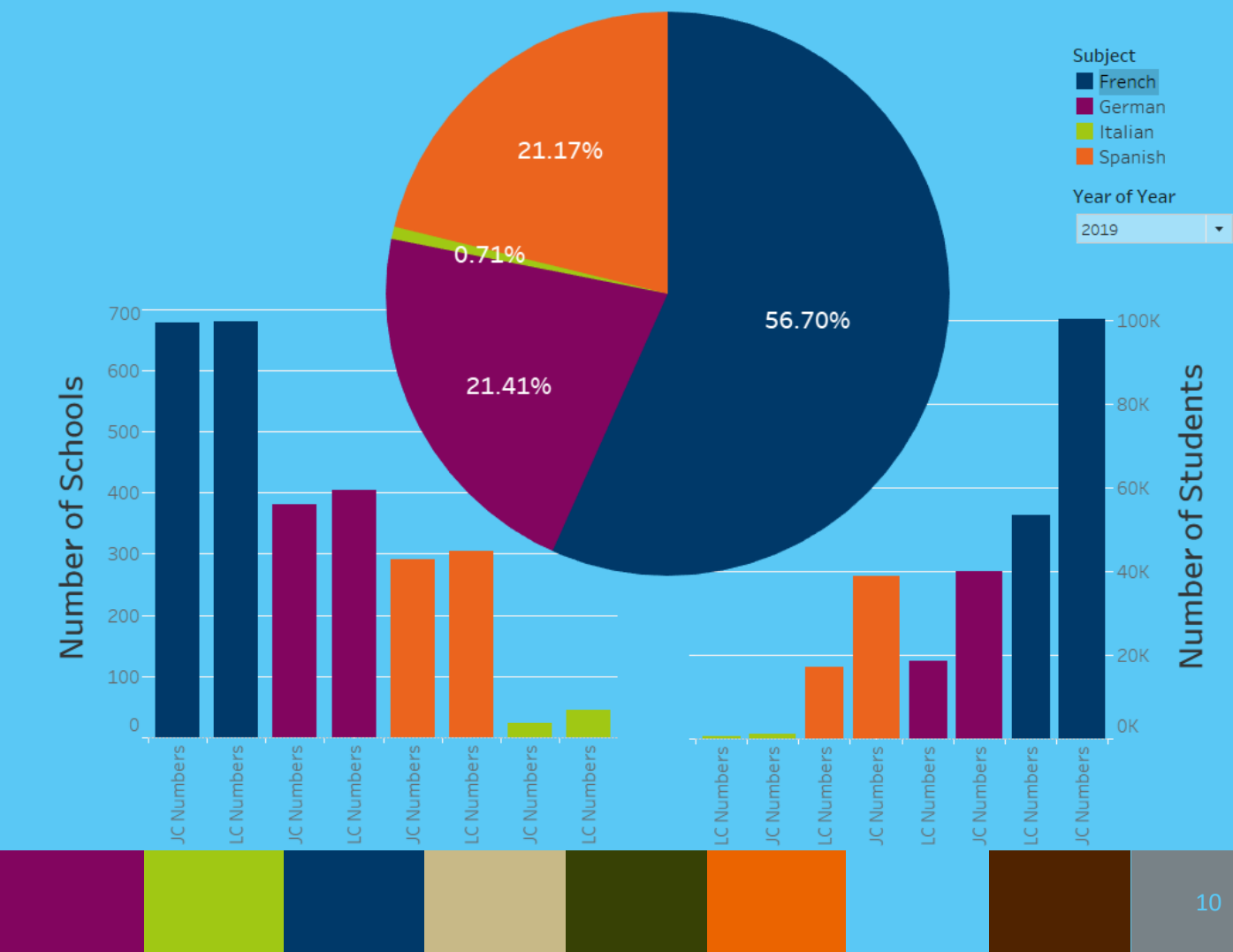
Pie Chart: Percentage of Students per Subject

Bar Charts: Number of Schools and Students per Subject

Both graphics refer to data of the latest year 2019.

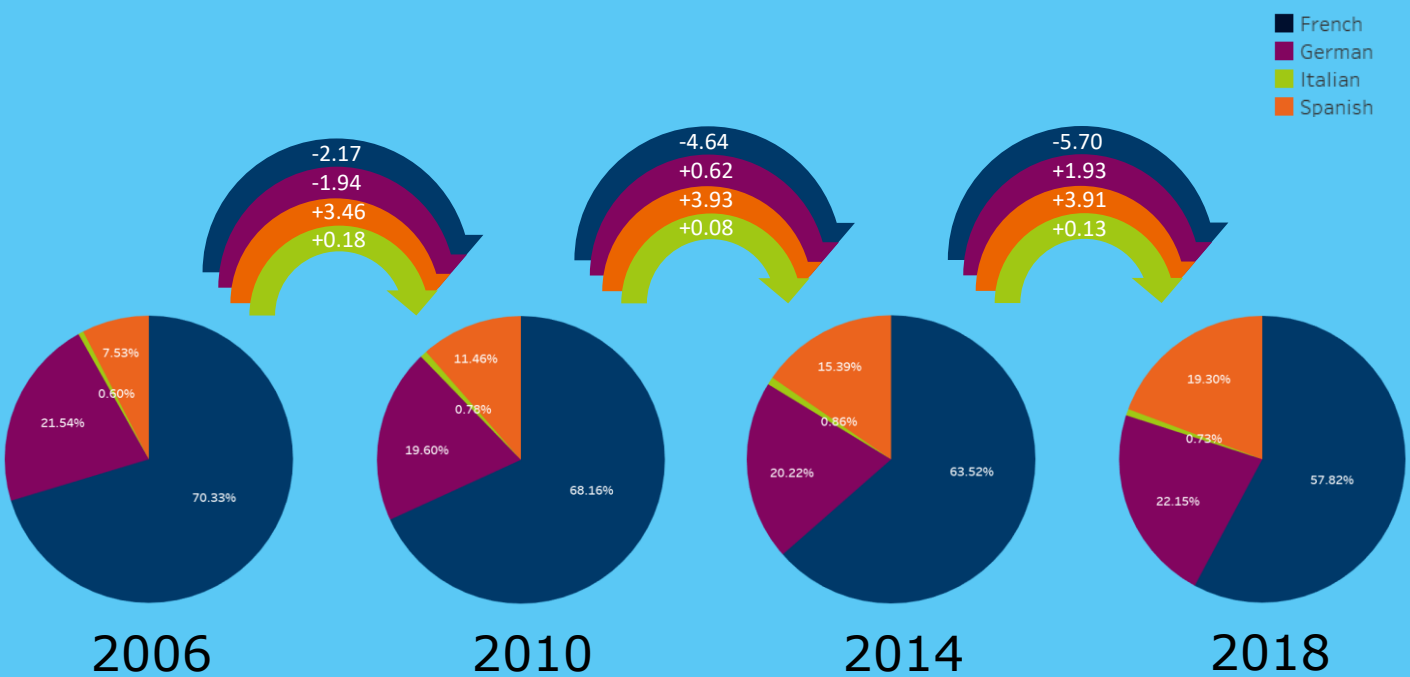
The pie chart shows the percentage of students per subject. With a great majority, French is the most learnt MFL in Irish secondary schools with 56.70% followed by German (21.41%), Spanish (21.17%) and Italian (0.71%).

The two bar charts show the number of schools offering each subject (left) and the number of students who take the given subject. Both separate into Junior and Leaving Cert. It is interesting to see that the count of schools stays relatively stable depending on if they offer a language in the JC or LC. However, there is a large decrease in student numbers between these two groups. This decrease will be further analysed in the following. Also again, it is clear to see that French is most often offered as well as taken as a MFL.



Development of Student Proportions per Subject: Gains and Losses over 12 Years

Over the course of 12 year (2006-2018) the proportions of students learning a MFL changed. In 2006, French started off with owning almost $\frac{3}{4}$ of the whole MFL student body (70.33%) followed by German (21.54%), Spanish (7.53%) and Italian (0.60%). Regarding French, it is clear to see that it keeps loosing and loosing popularity in secondary schools by going down by a total -12.51% until 2018. After an initial decrease in 2010, German seems to be quite stable with a total difference of + 0.61%. Also, Italian does not loose but cannot significantly gain in popularity and has a total plus of +0.39% in 2018, compared to 2006. French loosing -12.51% means that Spanish is gaining and more than doubles its student numbers from 7.53% in 2006 to 19.30 in 2018. This is a total plus of +11.77%.



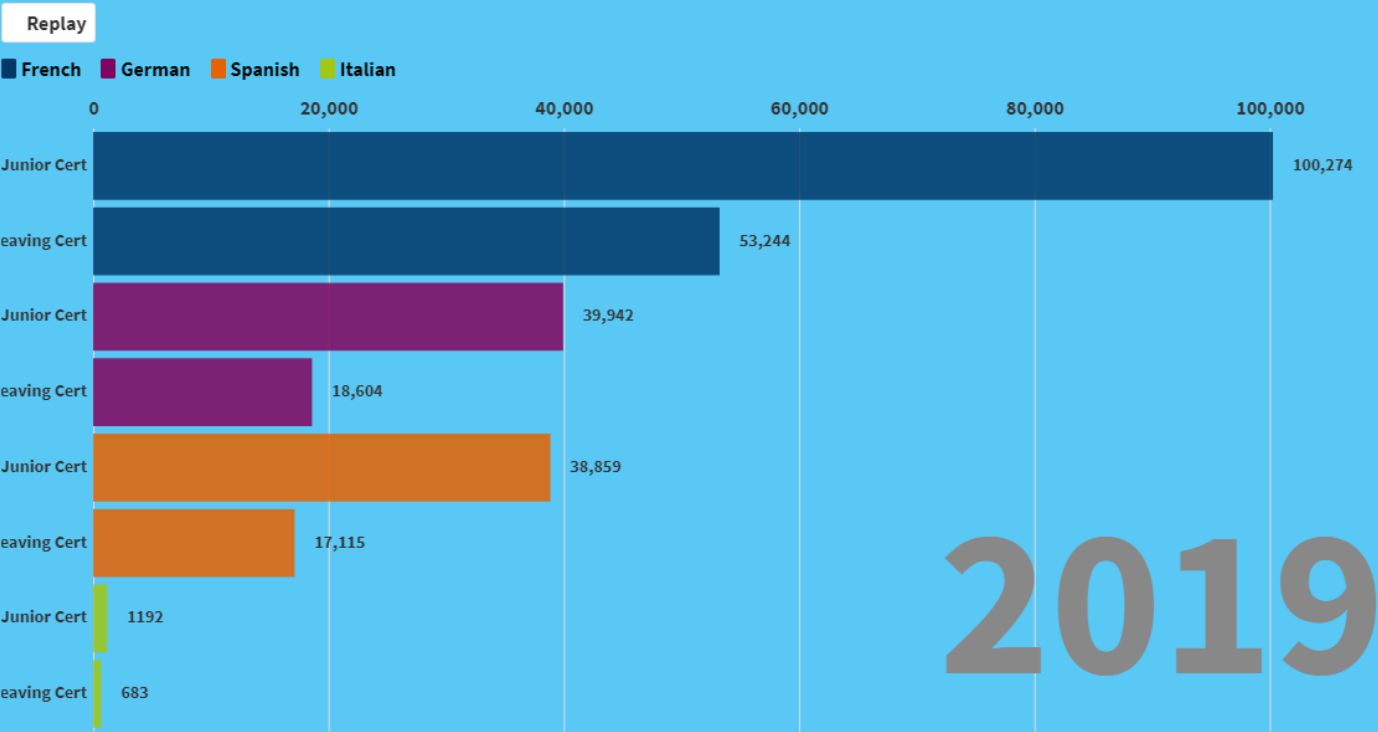
Development of Student Proportions per Subject

A 'Bar Chart Race' was created to show the development of student numbers for each subject and level over time. It is clear to see how French loses its popularity while Spanish gains more and more students and approaches German as second most popular MFL. According to this development, Spanish might have more students than German very soon.

Please follow the link to access the Bar Chart Race:

<https://app.flourish.studio/visualisation/530709/edit>

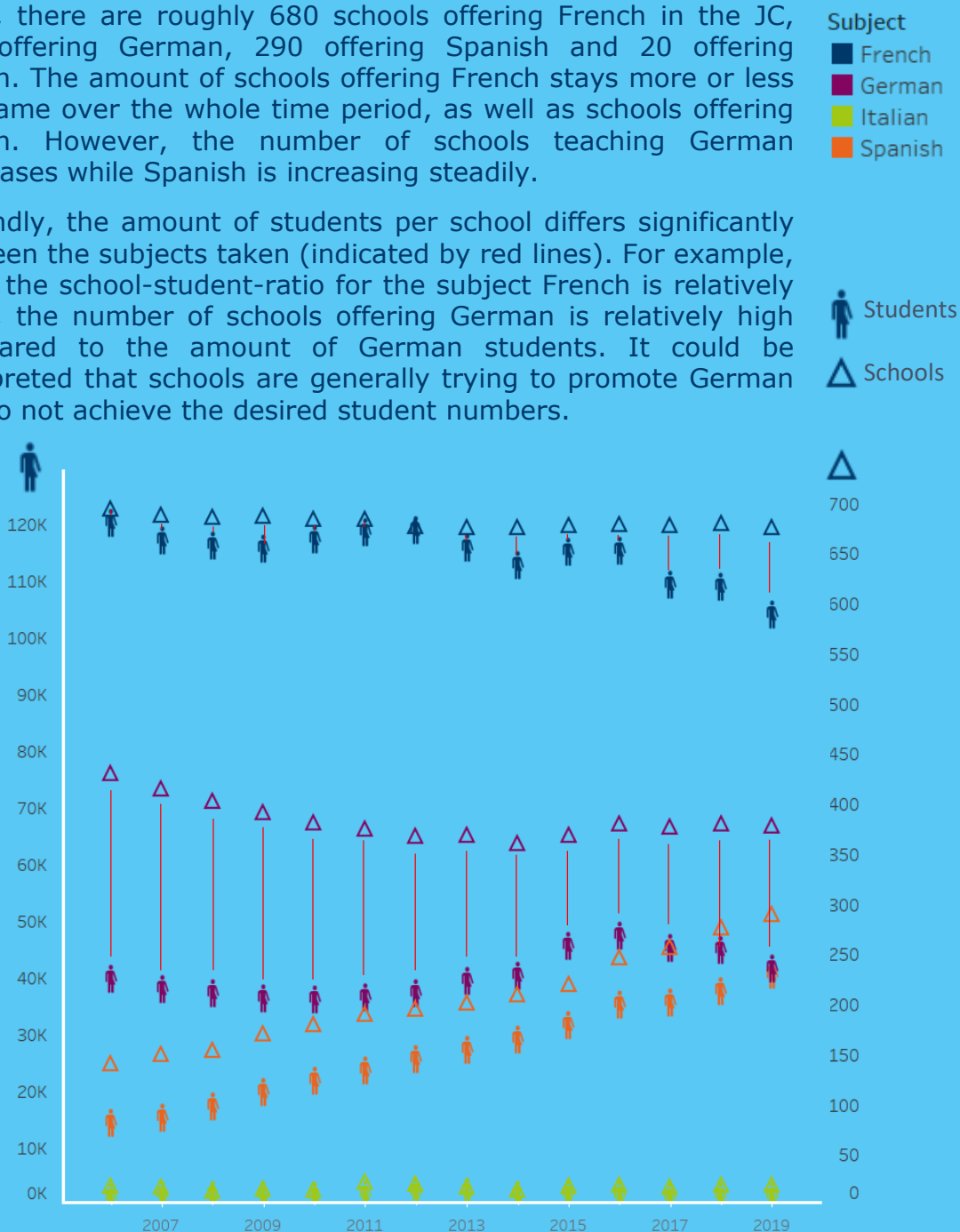
Number of Students in JC and LC: 2006-2019



Comparison: Number of Students and Schools per Subject in JC

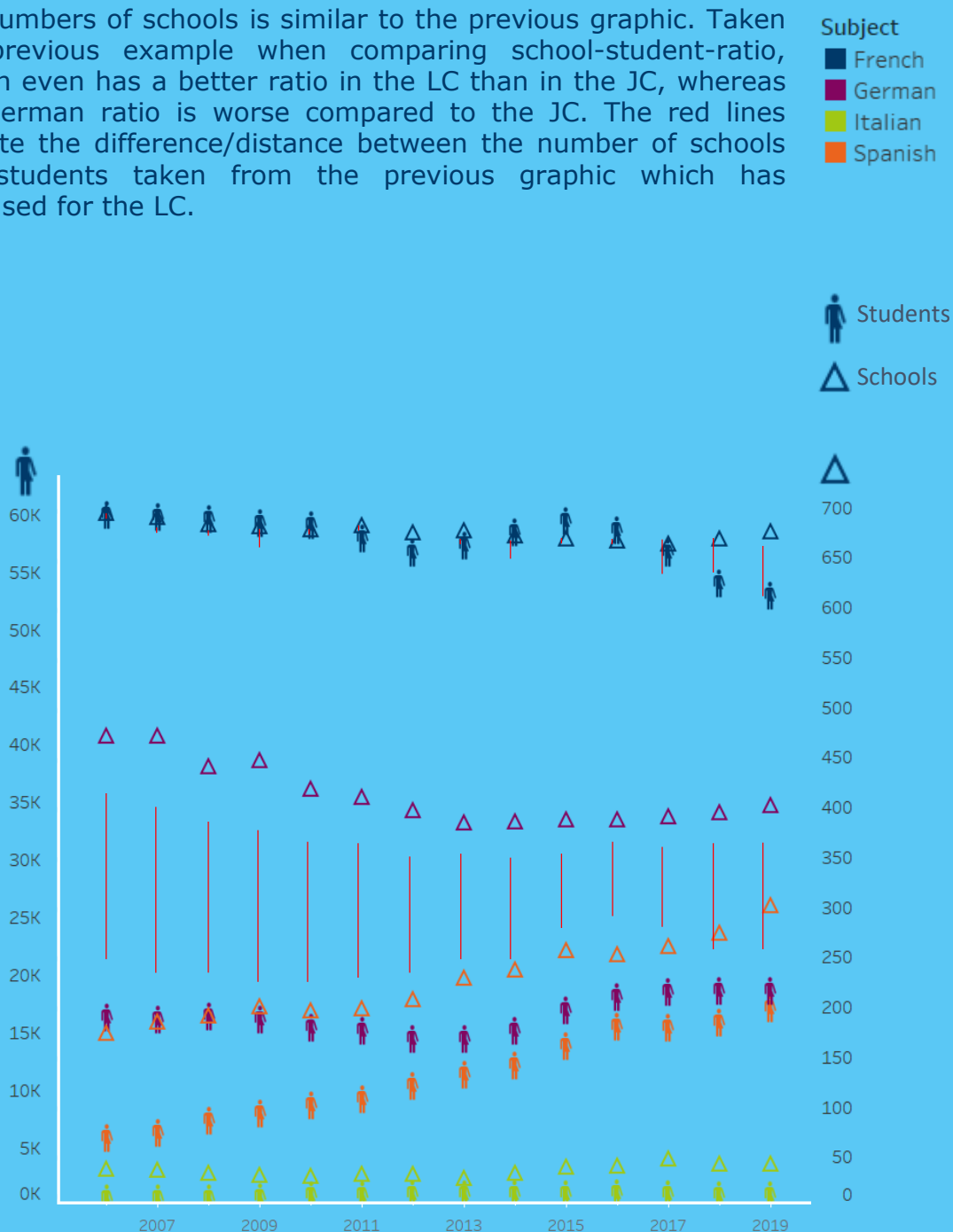
Firstly, the graphic shows the development of the number of schools and students from 2006 to 2019 in the Junior Cycle. In 2019, there are roughly 680 schools offering French in the JC, 380 offering German, 290 offering Spanish and 20 offering Italian. The amount of schools offering French stays more or less the same over the whole time period, as well as schools offering Italian. However, the number of schools teaching German decreases while Spanish is increasing steadily.

Secondly, the amount of students per school differs significantly between the subjects taken (indicated by red lines). For example, while the school-student-ratio for the subject French is relatively close, the number of schools offering German is relatively high compared to the amount of German students. It could be interpreted that schools are generally trying to promote German but do not achieve the desired student numbers.



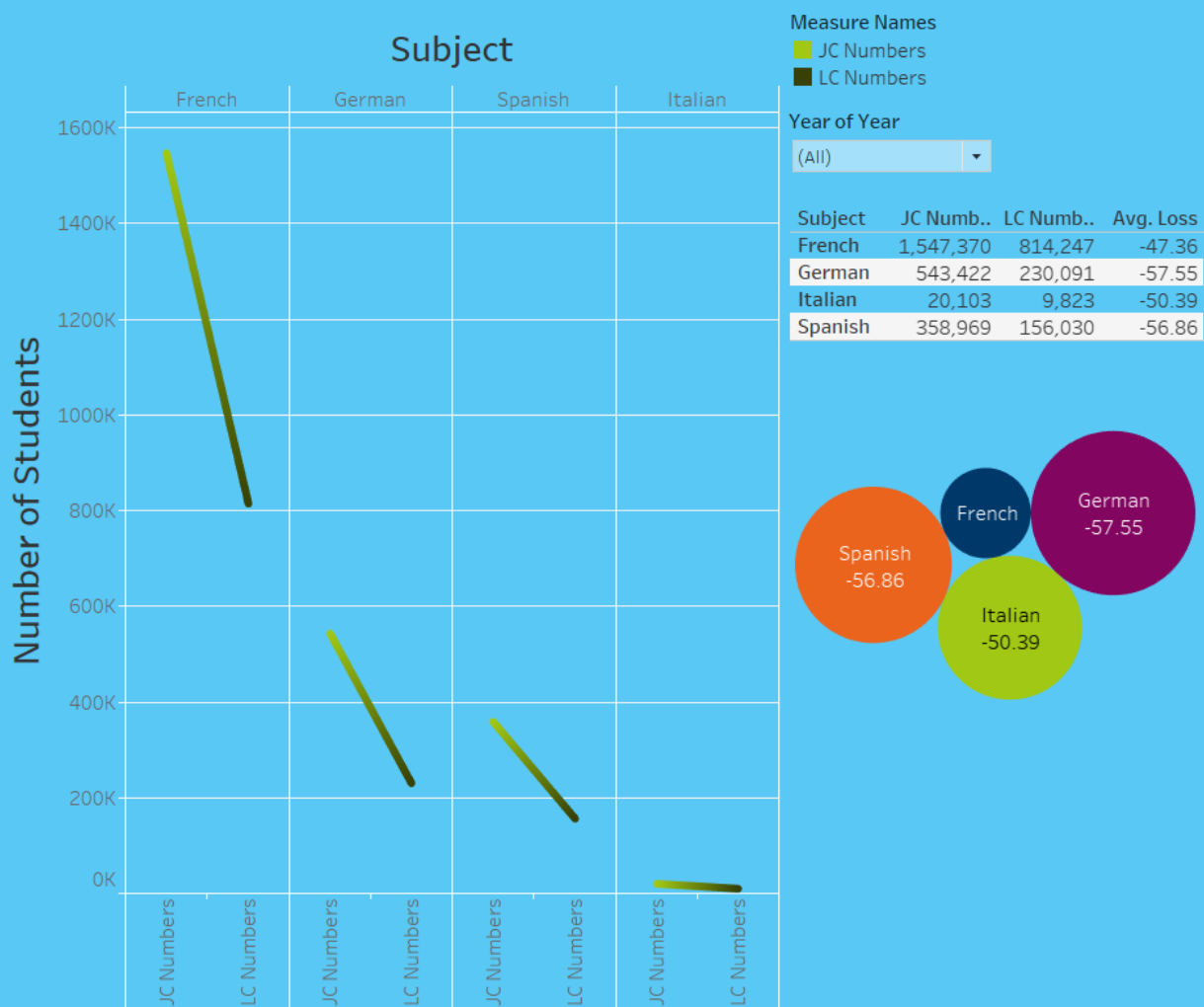
Comparison: Number of Students and Schools per Subject in LC

The numbers of schools is similar to the previous graphic. Taken the previous example when comparing school-student-ratio, French even has a better ratio in the LC than in the JC, whereas the German ratio is worse compared to the JC. The red lines indicate the difference/distance between the number of schools and students taken from the previous graphic which has increased for the LC.



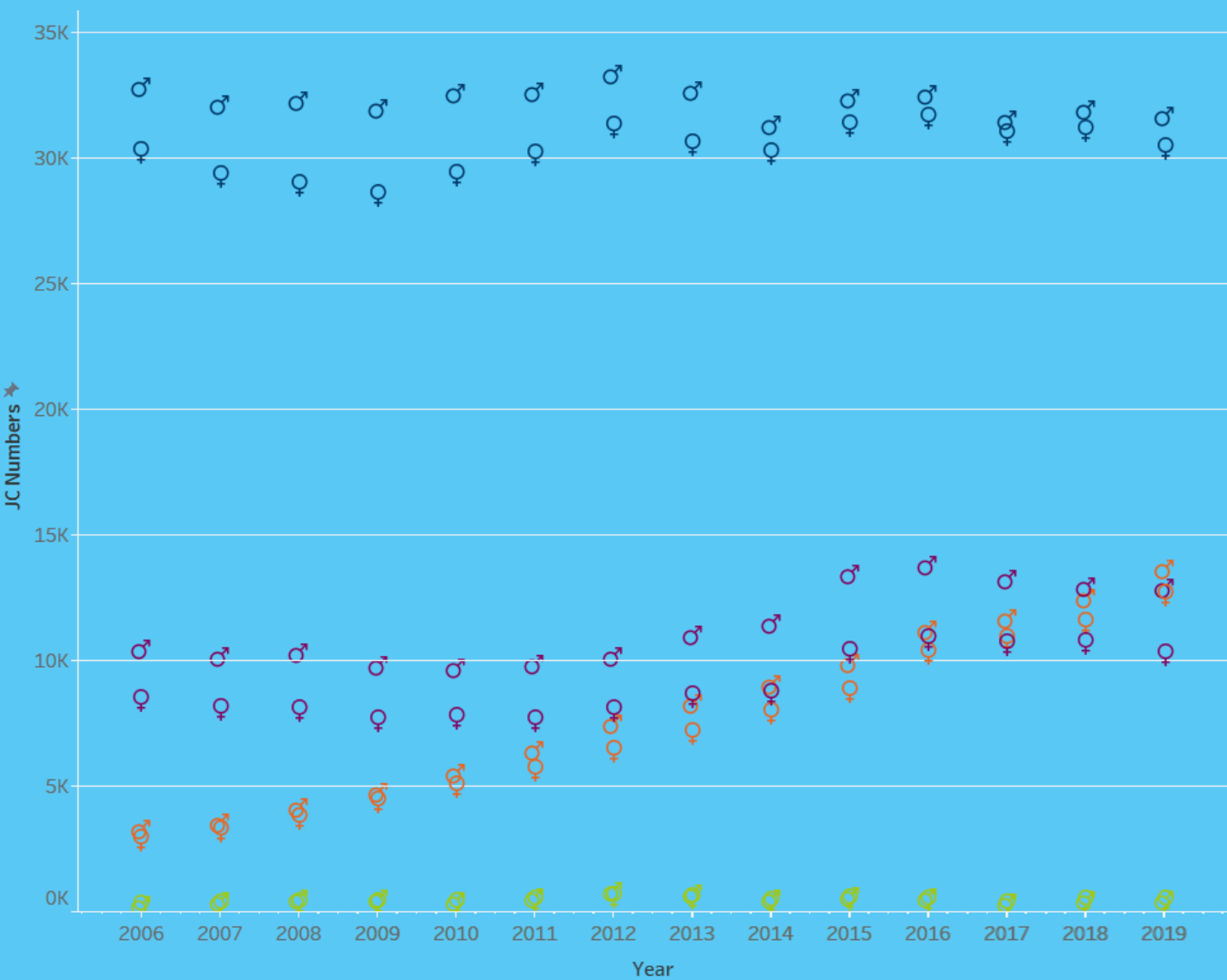
Regression: Student Numbers in JC and LC per Subject

Here, you see the regression in student numbers from the JC to the LC, taken all years between 2006 and 2019 together. The JC appears to be much more language based and popularity for all MFLs decreases in the final years of the students' school time. French has the steepest decrease in student numbers, since they start off with the highest values. However, with regards to proportions, German loses most of their student body with a decrease of -57.55%, followed by Spanish (-56.86%), Italian (-50.39%) and French (-47.36%). German, Spanish and Italian therefore lose more than half of their students from the Junior to the Leaving Cert, with German being least able to keep their students interested in the subject, as illustrated in the bubble chart.



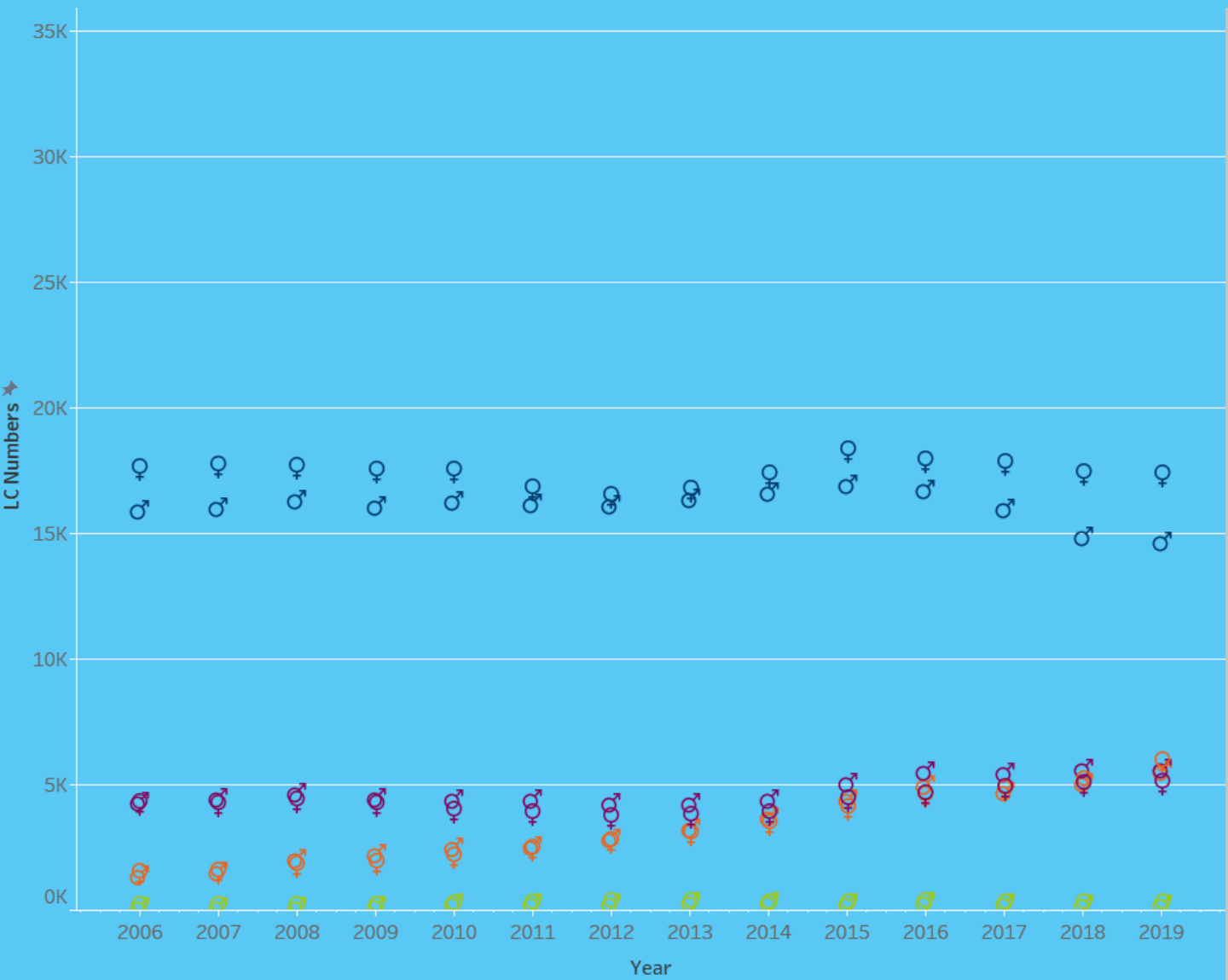
Gender: Numbers of Girls and Boys Doing a MFL in Their JC

Different languages seem to be of more/less interest to different genders. With regard to the Junior Cycle, boys are more likely to do any of the four MFLs. The data for the subject French shows that the initial difference between boys and girls reduces itself over the years, whereas for German or Spanish, the difference stays more or less equal.



Gender: Numbers of Girls and Boys Doing a MFL in Their LC

The same dataset shows that in the Leaving Cert, girls catch up or even overrun boys. In all subjects, they gain in numbers (gain as in: not losing as much) compared to the boys and in French, they even present the majority. Altogether, this means that boys are more likely to drop the MFL they had in their Junior Cert and do their Leaving Cert in other subject areas, whereas girls are more likely to keep their MFL in their LC, despite the general decrease in number outlined earlier.



Conclusion

An analysis of the state of modern foreign languages in the Irish secondary school system was conducted, in order to gain insights into student proportions and their development. The client, a German language institute, was specifically interested in German student numbers to be able to adjust their language strategy for the upcoming years. They were hoping that German was increasing in popularity on the secondary educational level.

The analysis shows that German is the second most popular language in secondary schools with around 20% of all foreign language students after French and before Spanish and Italian. However, over the past 13 years, this proportion has not changed significantly and with Spanish gaining in student numbers, it is about to drop down to third position.

Interestingly, the number of schools providing German as a subject for the Junior and Leaving Cert is very high compared to those offering Spanish. This could mean that schools are generally trying to support German in their pool of subjects but do not get good feedback.

With regard to student numbers in the Junior and Leaving Cert, German suffers the biggest losses compared to the other three foreign languages, with a general loss of around 57% from Junior to Leaving Cert.

In terms of gender, German seems to be preferred by boys, which is more obvious in the Junior Cert than in the Leaving Cert. Even though less girls pick German as a foreign language, they are more likely to keep studying it during their whole second level education time.

In conclusion, the idea that German was gaining in popularity could not be supported. Over the past years, the student numbers for both, JC and LC have been consistently around the 55.000 mark. Even though it could not significantly increase its numbers, it also did not lose as much as its competitor French, who is facing a steady decrease in student numbers.

Further research could be done focusing on the positive development of Spanish in secondary schools and the underlying reasons for that. Also, more effort could be put into the upkeep of German after the Junior Cert to prevent high fluctuation, especially for boys. Finally, languages initiatives could be introduced that specifically target girls to take up German, since they are currently not as engaged in the language as boys.

