Swiss Election 2023 - Who really won?

The working report.

Table of Contents

Motivation and target group

We chose the topic of Switzerland's 2023 autumn elections due to our interest in politics and the availability of reliable data. Switzerland's political system is unique, featuring 'flexible coalitions' instead of the traditional government-opposition divide. Understanding the nuances beyond regional vote percentages is crucial for grasping the true political landscape. Changes in Swiss politics are gradual and self-balancing over legislative periods. Our data story aims to demonstrate why the middle party emerged as the biggest winner, a narrative discussed in newspapers but not deeply analyzed. The story targets those interested in Swiss politics but not experts, requiring some basic political knowledge. We included a map chart to provide a visual overview, recognizing its limitations in directly reflecting election outcomes. This complements the Swiss public news' post-election analysis, which heavily relies on maps (https://www.srf.ch/news/schweiz/wahlen-2023/wahlen-2023-die-grosse-nachwahlanalyse-in-grafiken).

In contrast to most of the published information we decided to make a simplification of the data and reduce the complexity of the many parties into three groups. This is a pretty radical reduction but allows a better overview and also reflects the work in the parliament pretty good and is also a new view of the data next to the existing analysis.

Data exploration

For our data story, we used national and municipal election results, and Switzerland's geographical data for map plots, accessible from the Swiss open data portal and federal offices of topography and the federal office of statistics. These sources are listed in our project's 'election_data' folder. The challenge was in converting the deeply nested election data into a usable format. Fortunately, the municipality numbers in the election results and geodata matched, saving time. Our prior knowledge of the election results and Swiss politics meant we spent less time exploring the data, as we already knew what insights we wanted to present.

The municipalities and the parties had unified numbers in all the data provided by the government. This allowed us to create datasets which had the municipality number as an identifier and the results of the parties as data, which could then be aggregated into the groups based on a manual assignment of the parties.

The idea for small multiple charts in our maps emerged during data exploration. Our analysis was also inspired by NZZ and SRF's election coverage.
https://www.srf.ch/news/schweiz/wahlen-2023/wahlen-2023-die-grosse-nachwahlanalyse-in-grafiken and https://www.nzz.ch/schweiz/wahlen23.

Libraries and tools

We chose matplotlib, a library learned in our lessons, for its comprehensive functionality that met our needs, eliminating the need to consider others like Seaborn. We also utilized geopandas, an excellent tool for geospatial data, due to its similarity to the familiar pandas library. For data exploration, we used standard frameworks like numpy and pandas. Throughout the process, we frequently consulted ChatGPT for code generation and assistance, though the final implementation was done by us.
Additionally in our class David Schurtenberger which had a similar topic and shared with us some insights and best practices and some code snippets for the annotations of the map.

Chart 1: Election results of the national council

So, for our project on the Swiss elections, we needed to show how the elections changed the seat distribution among the political parties. We wanted something visually clear and informative. Our first idea was a typical bar chart, but then we thought, why not make it more interesting? That's when we decided on a horizontal bar chart. It felt more intuitive and would show the parties in a way that's easy to understand.

Each party was assigned a distinct color, carefully chosen to reflect its political identity, ensuring the colors were politically coherent. We spent considerable time perfecting these color choices.

Annotations were key, displaying the number of seats and changes from the previous election on the chart itself. This provided precise numbers and highlighted the shifts in seats, enhancing the chart's informativeness.

We omitted the standard legend, using party names directly on the chart, assuming familiarity with Swiss political parties among our audience.

Chart 2: Party grouping chart

To introduce the grouping into different political spectrums we decided to make a chart to make this clear. As the grouping is something we wanted to specifically do in our story, there was no inspiration for that.
The first draft was also to work with a stacked bar chart which would have actually given more insight into the data but rather in an abstract way. To find the right way to display it we stumbled across the way how Wikipedia but also SRF is showing the shares of a parliament chamber – a donut chart with an empty space. The reason behind that is that it resembles to the seating allocation within the chamber.
The information loss is that it's typical for a pie chart to see less good which percentages exactly do the parties have (especially with the empty part of the donut) but this information is not needed and rather distracts the observer. The important thing in this chart is to understand which party is assigned to which group and how is the power distributed approximately which is both clearly visible.
We chose not to use a traditional legend, instead using party logos, as our target audience is familiar with Swiss political parties. We omitted minor parties, resulting in an incomplete total, but this didn't impact the visual effectiveness. An annotation clarifies this choice.
Color selection
For color selection, we used Adobe Color to create a 'Triad' of maximally distinct colors, initially considering red, yellow, green. However, we changed to green, orange, and violet to avoid issues for color-blind viewers, ensuring readability and differentiation after a coaching. These colors will remain consistent throughout our story, allowing viewers to recognize each group without repeated explanations.

Chart 3/4: Swiss map with winner and grower

The two main Swiss maps were central to our data story, offering comprehensive insights into the country's political landscape. We emphasized the relative winners by coloring municipalities according to the group with the highest percentage, based on our earlier

group color introduction. To keep the maps clear yet informative, we included cantonal borders for structure and orientation but avoided overloading them with details. Annotations on these maps were crucial for highlighting key points from our narrative. Each annotation focused on a political group, showcasing their strengths and reflecting typical Swiss election outcomes.

To enhance comparison, we replicated the first map's format with data for the fastest-growing group in the election, clearly illustrating the contrast to typical results. We avoided additional annotations in this second map, choosing instead to explore its significant aspects through another plot and accompanying textual explanations.

Chart 5: Highlight newly won municipalities

This chart, highlighting significant differences around Zurich and central Switzerland, stemmed from analyzing charts 3 and 4, emphasizing the success of middle parties. To manage its complexity, we used a small-multiple approach, dividing the analysis across three maps for each political group, enhancing clarity in identifying specific areas. The middle party map, being our focus, was placed on top with an annotation and ellipse to draw attention to key points.

We omitted additional elements like color legends, as our consistent color coding throughout the story made this chart understandable to our audience. While the chart relies on accompanying text and context from charts 3 and 4, it could benefit from more standalone explanatory elements. However, we chose to keep it as is, considering it a part of a larger narrative rather than an isolated graphic.

Chart 6: Average group results compared to municipality size

In our penultimate chart, we explored the impact of living conditions on election behavior. Using party strength data from various municipalities, we aimed to visually represent each party's strength in differently sized towns. This involved grouping towns by size and calculating each party's average strength within these categories.

To maintain clarity, we grouped and colored the parties as in previous charts. A text annotation was included to highlight key observations, such as the varying strengths of groups in larger versus smaller towns. We also ensured to cite our data source and retained the legend to clarify color meanings, allowing the chart to be self-explanatory.
Inspiration : https://www.srf.ch/news/schweiz/wahlen-2023/wahlen-2023-die-grosse-nachwahlanalyse-in-grafiken

Chart 7: Combined power in both chambers

The last chart has the intention to do a parenthesis and a summary of our analysis and make a last point to our narrative. This was also the reason why we have decided to go for the same chart style as the first party grouping chart to call up the similarity.

We wanted to bring in the approach that we now made the analysis of the national council results but did not even consider the second chamber even when they are equally powerful. We wanted to display this power and sliced the results to be worth each 50% of the chart. The outer ring represents the different two chambers per group – also here like the first donut chart – it is not important how much the exact share is, it depends on the proportion. We decided to work with a darker shade of the color to make a visual differentiation while

keeping the group together. The inner ring then is a helper ring to make it more appealing to an observer what the combined power is, there we have also labels in the center of the donut, pointing out the strength. A critical point is that we are using the same color in the inside as we are using on the outside for the national council. With the surrounding information we think it's a bearable trade-off.

The annotation is there to underline our narrative we did – that the middle parties already have made a great figure in the national council - and just with one view on the states council we can even see that they did even better there.

Timebook

Date	Hours	Done by	Task description
23.10.2023	1.5	Silvan Vifian	Setup storyline
23.10.2023	1	Silvan Vifian	Search and download data
24.10.2023	4	Silvan Vifian	Setup geopandas, try with geopandas
24.10.2023	0.5	Silvan Vifian	Setup repository
06.11.2023	0.5	Silvan Vifian	Improve storyline
13.11.2023	0.5	Silvan Vifian	Team discussion
13.11.2023	0.5	Luca Niederer	Team discussion
14.11.2023	3	Luca Niederer	Setup geopandas, try with geopandas
18.11.2023	3	Luca Niederer	Started work on general election chart
25.11.2023	4	Luca Niederer	Worked on general election chart
27.11.2023	0.333	Silvan Vifian	Coaching
27.11.2023	0.333	Luca Niederer	Coaching
15.12.2023	4	Silvan Vifian	Setup report, generate first version of bucket chart
16.12.2023	1.5	Silvan Vifian	Finish basic implementation of grouping chart
16.12.2023	2	Luca Niederer	Started working on municipality bar chart
16.12.2023	0.5	Silvan Vifian	Call Luca
16.12.2023	0.5	Luca Niederer	Call Silvan
16.12.2023	6	Luca Niederer	Worked on municipality bar chart
16.12.2023	1	Silvan Vifian	Finished V1 party grouping chart
17.12.2023	2	Luca Niederer	Worked on municipality bar chart
17.12.2023	1.5	Silvan Vifian	States council chart preparation
18.12.2023	3	Luca Niederer	Worked on municipality bar chart
18.12.2023	2.5	Silvan Vifian	DVIZ + states council
28.12.2023	5	Silvan Vifian	States council chart basic finalisation
29.12.2023	7	Silvan Vifian	Maps finished just some annotations missing
29.12.2023	1	Silvan Vifian	Teammeeting with preparation
30.12.2023	4	Silvan Vifian	Finishing all charts with annotations
31.12.2023	2	Silvan Vifian	Writing data story
31.12.2023	2	Luca Niederer	Worked on municipality bar chart
01.01.2024	5	Luca Niederer	Worked on municipality bar chart
02.01.2024	4	Luca Niederer	Working on putting together HTML
02.01.2024	3.5	Silvan Vifian	Working on report
03.01.2024	1	Luca Niederer	Setting up README.md
03.01.2024	1	Luca Niederer	Quarto Export
03.01.2024	1	Silvan Vifian	Review final exports, rewrite parts of report
03.01.2024	2	Luca Niederer	Working on Report
04.01.2024	1	Luca Niederer	Finishing up work
04.01.2024	1	Silvan Vifian	Merging, tidy up final submission