A Career Dataset of Flemish Ministerial Advisors (1999-2020) Leveraging Online Data Sources

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Abstract

This research note introduces a dataset on the career paths of 754 Flemish ministerial advisors (MAs) spanning from 2000 to 2020. The dataset offers comprehensive insights into variables such as gender and age distribution, educational backgrounds, and career trajectories of MAs. To develop this dataset, we employed a suite of software tools designed for data collection, cleaning, and coding. This note details both the tools used and the resulting dataset, while also addressing potential biases and the robustness of the findings. We believe that both the data collection methodology and the dataset itself provide valuable opportunities for further research in elite career studies.

1 Introduction

The career paths of elites have long been an important focus of political science research. Recent studies have examined the professional backgrounds of ministers (Atkins et al., 2013; Botella et al., 2010; Jäckle, 2023; Kroeber & Hüffelmann, 2022; Searing, 2019; Semenova, 2018), bureaucrats (Brösamle, 2012; Carroll, 1996; Trangbæk, 2023; Veit, 2020; Veit & Scholz, 2016), and parliamentarians (Aldrich, 2018; Bíró-Nagy, 2019; Claessen et al., 2021; Ohmura et al., 2018; Palmer, 2021; van der Vlist, 2024). Increasingly, this research includes studies on ministerial advisors (MAs) (Alam et al., 2019; Blick, 2004; Maley, 2023). MAs, alongside bureaucrats and executive politicians, are key actors in the so-called executive triangle (Bach & Hustedt, 2023). As non-elected officials, MAs assist ministers in day-to-day policy-making across numerous Western democracies, although their roles and titles vary (Brans & Pickering, 2020; Hustedt et al., 2017; Shaw & Eichbaum, 2023). This paper introduces a dataset

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detailing the career backgrounds of Flemish MAs, derived from LinkedIn profiles, and outlines the methodology used to compile it, which we believe can be applied to similar cases.

As in other Napoleonic systems, MAs have historically played a crucial role in Belgium, with large and influential ministerial cabinets (MCs) (Brans et al., 2017). This cabinet structure was adopted at the Flemish level following the establishment of the Flemish government in 1981. Since the studies by Pelgrims (2003) and Walgrave et al. (2004), there has been a nearly 20-year gap in research on the career backgrounds of these influential actors in Flemish policy. This dataset addresses this gap.

Additionally, this paper reflects on the methods used to compile the data. As the sources for researching elite backgrounds become more diverse and accessible (Lunding et al., 2020), new methods for managing these data are required. We believe that our approach enhances replicability, saves time, and facilitates collaboration.

The following section briefly discusses the methodology, followed by a descriptive overview of the new dataset.

2 A software tool for semi-automated data-collection, cleaning and analysis

2.1 Introduction

The dataset we compiled covers the professional and educational backgrounds of Flemish ministerial advisors from 1999 to 2020, based on online accessible sources such as government rosters and LinkedIn profiles. The development process was divided into four phases: identifying names, gathering career information, integrating sources, and coding. While this methodology offers advantages over traditional surveys, it also presents challenges in consolidating and standardizing data from various formats.

At the highest level, the data collection process integrates multiple sources, culminating in a PostgreSQL database that details the advisors' careers and education. PostgreSQL was chosen for its ability to manage complex, hierarchical data and its compatibility with various programming languages and statistical software like R or Python. The database is managed via a Flask-based back-end and accessed through API endpoints. Given the extensive data volume, the final two phases involved manual input, facilitated by a basic front-end developed with Angular.

2.2 Step 1: Collecting names

In elite career studies, the first step is usually to identify the individuals within the defined elite group. For this study, we sought the names of all Flemish MAs from 1999 to 2020, based on annual lists provided by the Flemish government to the parliament (see Table 1). These lists, found in PDF files, included details

such as name, start and end dates, and roles within the MC. However, the PDFs could not be directly converted into computer-readable lists due to formatting inconsistencies. An important note here is that we adopted the broadest possible definition of MAs in this initial phase: anyone working in the MC is included, even if some individuals would not be considered "adviser" using a more strict definition.

We began this project in 2021, using Tesseract and OpenCV libraries in Python to convert the tables into CSV files. Despite formatting variations that hindered fully automatic scraping, we successfully generated a CSV with most names correctly listed. Adobe's PDF to CSV tool was also used, although it required manual sorting due to inconsistent cell formatting. By cross-referencing the OCR-generated file with the Adobe file, and manually correcting discrepancies, we created a complete list.

The list was then deduplicated to account for MAs who appeared multiple times due to extended service or roles in different MCs. Deduplication was performed automatically, allowing for minor OCR or typing errors. Each advisor was assigned a unique ID in the PostgreSQL database, with corresponding rows for each of their positions, detailing title, workplace, and tenure.

Table 1: Governments and their respective years of reporting

Government	Year of reporting
Dewael Government (1999-2003)	2000
Somers Government (2003-2004)	2003
Leterme Government (2004-2007)	2006
Peeters Government I (2007-2009)	2008
Peeters Government II (2009-2014)	2012
	2013
	2014
Bourgeois Government (2014-2019)	2014
	2015
	2016
	2017
	2018
	2019
Jambon Government (2019-2020)	2019
	2020

2.3 Step 2: Collecting career data

The next step is to obtain career information for all MAs. The only data source used for this is LinkedIn data. LinkedIn does not have an API and scrapping is not allowed. Therefore, for each advisor on the list, a query was done on

LinkedIn itself and the PDF versions of the resume of the first two hits were systematically downloaded. Several MAs' names appear multiple times, making it uncertain whether the first hit is about the MA found on the advisor list. The LinkedIn profiles have a set format: they include personal information, a section that lists all career steps with description, start and end dates, and an education experience section. Once all these documents are obtained, the PDF files are parsed automatically through zero-shot learning. The PDF file is read with PyPDF2 and converted to full-text format. This text is processed in a prompt (see Appendix A) that is passed to a GPT-4 model via OpenAIs API. The prompt asks to structure the response as a JSON file with objects for each career position found (title, workplace, start date, end date, description) and educational experience (degree, institution, field of study, start- and enddate). Then there is a rule-based verification of reponse that checks if the JSON file and data are valid before the positions are added to the PostGreSQL database in the position and education tables, respectively.

2.4 Step 3: Merging different sources

At this stage, the government lists and LinkedIn data have been collected, processed, and stored. Before proceeding to data coding, two additional steps are necessary to ensure the data's usability. First, there may be multiple LinkedIn profiles for the same MA, or irrelevant profiles of individuals with similar names may have been retrieved. Second, positions in the MC, as listed on government rosters, may also appear on LinkedIn profiles, necessitating the merging of duplicate entries.

The previously mentioned front-end interface facilitates this process. For each advisor, four steps are required: the first two involve merging the various data sources, while the last two involve coding the data. Initially, the user is presented with two LinkedIn profiles in the first screen (see Appendix B). The user can scroll through the profiles, selecting the correct one or indicating a mismatch. After making this selection, the user moves to the second screen, where government-listed positions are displayed alongside those from LinkedIn. The user can choose to merge any duplicate positions. In the back-end, the original positions are deleted, and a new entry is created based on the user's input.

2.5 Step 4: Preparing for analysis: coding the data

Finally, all positions, both professional and educational, are coded and labeled. The end user is presented with a screen displaying the title and workplace (or for education, the degree, subject area, and institution) in the left-hand column for each position. The right-hand column contains drop-down menus for each variable to be coded. For professional positions, these variables include sector and role in the ministerial cabinet, while for educational positions, they include degree and subject.

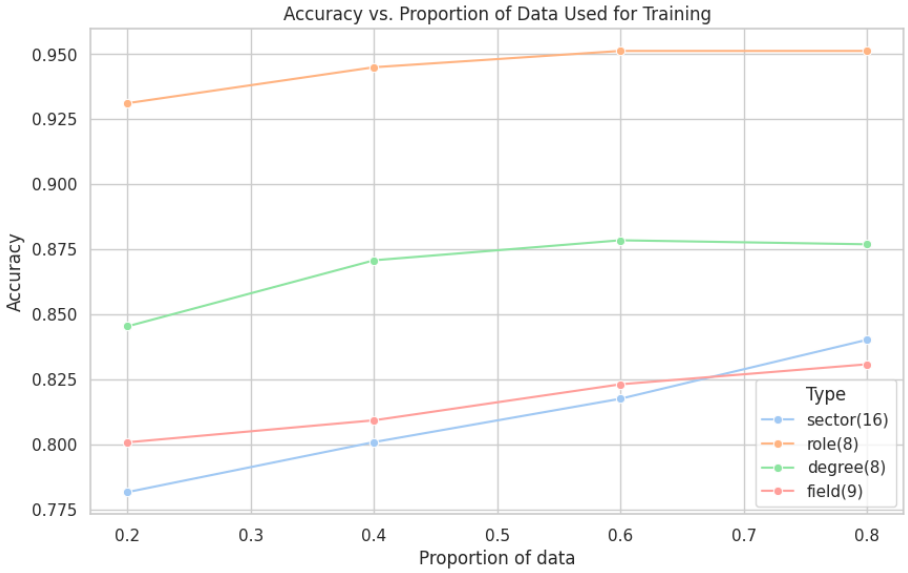

Figure 1: Accuracy vs. Proportion of Data Used For Training. Even at a 0.2 proportion of the data used for training results are good (considering number of groups) but retraining when new data is available proves to be beneficial.

To expedite the coding of the large dataset, we implemented a semi-automated process using a combination of machine learning methods. Initially, with no prior data, we employed a k-nearest neighbors algorithm that generated a probability distribution over possible labels based on embeddings obtained via OpenAI's text-embedding-ada2. Although this method was slow and had limited accuracy, it was our best option at the time. In a later phase, we fine-tuned a neural language model twice using the available data to improve the probability distribution. We used the bert-base-uncased language model with an added classifier layer[1], and as shown in Figure 1, repeated training of BERT on the data proved beneficial.

These probability distributions were then sent from the back-end to the front-end, where they determined the order of labels in the drop-down menus. The most likely label appeared at the top, reducing the need for manual selection when correct. The chosen codes were then saved in the back-end and linked to the corresponding positions.

[1]TensorFlow, learning rate 3e-5, 5 epochs, sparse categorical cross entropy loss. Trained on a T4 GPU on Google Cloud infrastructure

3 The dataset of Flemish ministerial advisers between 2000 and 2020

The resulting dataset encompasses 754 MAs who worked in a Flemish MC between 1999 and 2020. For these individuals, we identified and labeled a total of 5828 career positions. In the coming sections, we do an initial exploratory description of the data we collected. This research note hopes to offer insight into the various research questions that can be answered using this dataset but will not elaborate on theoretical issues itself. At most, the initial descriptive findings will be tested against similar work. In addition, this second part also reflects on the strengths and limitations of our way of working. Data and figures are not presented as a one-on-one reflection of reality but as the result of our specific data collection methodology. First we discuss the individual ministerial cabinets and the number of data points we collected on them, then we discuss gender and age distributions, respectively. After that we discuss the educational backgrounds of the individuals and finally their careers, divided into before and after their time in the MC.

3.1 The ministerial cabinets

As cited earlier and listed in Table 1, our dataset includes 7 Flemish governments between 1999 and 2020. Our dataset includes 72 ministerial positions (the number of individual ministers per government) held by 48 individual ministers. Table 2 shows how the ministerial positions are distributed over the different Flemish political parties that held office [2].

Table 2: Ministerial positions per party

Party	**Open VLD**	**CD&V**	**Vooruit / sp.a**	**N-VA**	**Groen**	**VU**
Count	20	18	15	13	4	2

While Table 2 is informative, it is not a completely accurate representation of the balance of power in Flanders for the period 1999 - 2020. Open VLD, for example, performed several ministerial changes over the years within one portfolio within one legislature. During the Bourgeois government, for example, three different Open VLD ministers were deployed for the same Finance and Budget portfolio.

A more accurate representation might be the distribution of MAs per party. Of the 5828 career positions, 1245 are cabinet positions in the Flemish government between 1999 and 2020. Advisers not only take on multiple cabinet positions during their careers (more on that later) but also sometimes split them

[2]Note that we are not referring to portfolios here, these are distributed differently and with greater complexity (throughout a legislature portfolios can shift or change title making it hard to make a purely data driven count per party).

into multiple positions in their reporting on LinkedIn in a way that is not necessarily consistent with government sources. We will deal with this in different ways throughout this research note, depending on the information we are looking for. To determine the distribution of MAs by party, we counted the number of unique advisors per legislature. Thus, an advisor may appear twice in the count but only if they served in different legislatures. The result is shown in Table 3.

Table 3: MAs per party

Party	**CD&V**	**Open VLD**	**N-VA**	**Vooruit / sp.a**	**Groen**	**VU**
Count	363	262	259	187	40	9

The differences with Table 3 are evident: CD&V takes first place by a wide margin, N-VA and Open VLD come close together in places two and three (where N-VA came just behind Vooruit / sp.a in Table 2). This distribution probably appears more realistic to those familiar with Flemish politics. An important note on this is that again, it does not necessarily reflect the number of individual cabinet positions but the number of individual people who were hired within one legislature. In addition, this figure represents the number of people who have a (valid and code-able) LinkedIn profile, which as cited in section 1 amounts to about 1/3 of the entire population.

The latter fact is evident in the distribution of ministerial advisors over time. Figure 2 shows, analogous to the counting method for Table 3, the number of MAs per government. The number of MAs remained relatively stable over the years in Flanders, this figure is mainly a reflection of the fact that, the more recent the government, the higher the likelihood that a cabinet member has published her or his information on LinkedIn. Another fact that can be picked up here is that our count was cut off in the year 2020, despite the government continuing into 2024. The number of advisors found in the Jambon government is lower than the number of advisors in the Bourgeois government. Given that the Jambon government was only a year into its term when we stopped counting, there were fewer personnel changes than in the Bourgeois government, and some MCs may not even have been fully established.

Ministerial cabinets in the Napoleonic systems are hierarchical organisations. From the point of view of legislation, there are 3 categories of personnel in the Flemish ministerial cabinets that apply for the entire period: advisory personnel, executive personnel and auxiliary personnel. Although the formal stipulations remain unchanged, their interpretation varies over time and even within governments. Therefore, as explained in previous section, we manually added labels indicating our assessment of the MA's role based on the description of the role the government document and the adviser's own title and description on their LinkedIn profile. Overall, our dataset includes 5.38 percent chief of staff

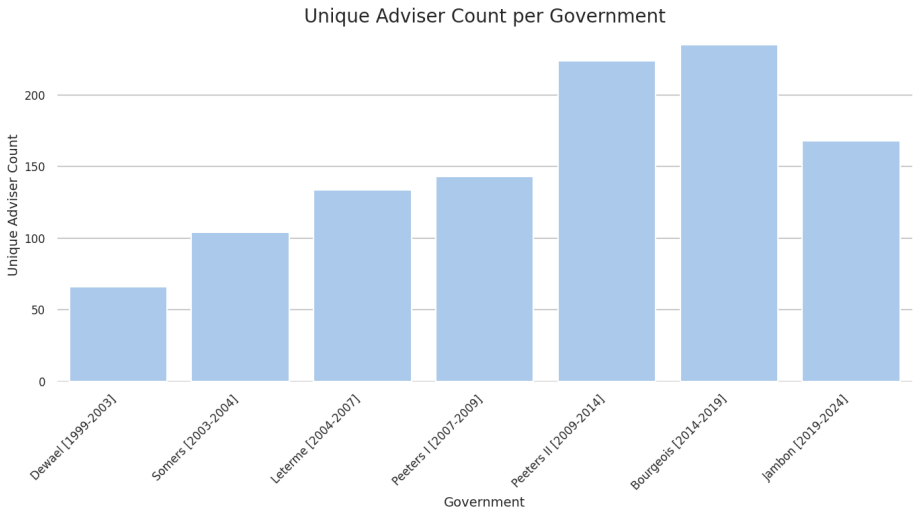

Figure 2: Unique advisers per government.

and 10.44 percent vice- chief of staff positions. The majority of our positions are adviser positions (53.25 percent) with second place being the category that includes support staff like drivers, secretaries, IT staff etc. (21.69 percent). An interesting observation might be that staff dealing with media such as spokespersons, webmasters, social media manager etc. also remain relatively stable, with only a slight increase around an average of 6.51 percent.

When it comes to Flemish ministerial advisers and their career paths, there are not many points of comparison. The only study that has some overlap in terms of data points is Pelgrims (2003), which conducted a survey research on Flemish ministerial cabinets between 1996 and 2002, and thus partly includes the Dewael government. Pelgrims reports having obtained responses from 97 individuals from this government (Pelgrims, 2003, p.13)[3], where we have full career data for 66 individuals. Another study concerned with the same matter is Walgrave et al. (2004) who investigated the career paths of advisers at different levels of government in Belgium, albeit between 1970 and 1999. In total, across levels, Walgraeve et al. constructed the career paths of 4779 advisers but exclusively with career steps within a Belgian ministerial cabinet. Other studies focused on MAs at other levels in Belgium: Gouglas et al. (2015) on the federal level (n= 40), Meert and Brans (2021) on the German-speaking community MAs (n= 58) and Moens (2022, 2024) also on the federal level.

[3]Please note that there are multiple publications of Pelgrims on the same data. We mainly will refer to the Pelgrims (2003) peer-reviewed publication, but there are some figures that can only be found in Pelgrim's dissertation Pelgrims (2001).

3.2 Gender

A first variable frequently discussed when it comes to MAs and their backgrounds is gender (Achin & Dulong, 2019; Maley, 2023; Taflaga & Kerby, 2020). Although we do not have official data on the genders of individual MAs, using the first names of the advisers, we can make a good estimate of the gender distribution at the cabinet level. From the National Register we calculate the probability that a given first name is male; the average of these probabilities for all MAs in a MC is an estimate of the gender distribution for the cabinet in question. Overall, we estimate that 39.05 percent of the MAs in our sample are female. An important limitation of this measurement method is that we rely on the binary gender classification of the National Register and are thus forced to follow this classification in our estimation. As a result, we have no insight into the proportion of MAs who identify outside the gender binary. In addition, for privacy reasons, the National Register does not publish data on names that occur less than five times in the total population. Rare names or spellings are therefore not included in our calculations, which may lead to the exclusion of certain socio-economic groups from the calculation. Of the 754 MAs, an estimate could not be made for 20 individuals.

The overall proportion of women, 39.05 percent, is in line with other research on gender in ministerial cabinets. Achin and Dulong (2019, p. 789) report 35 percent women in the Hollande ministerial cabinets. As listed in Maley (2023, p. 393), similar proportions can be found in Slovakia (36 percent, Krajňák et al. (2020, p. 130)), Australia (43 percent, Maley (2021)) and the Netherlands (45 percent , van den Berg (2018)). However, looking at Pelgrim's data on the Dewael government, the proportion of women is 23 percent (Pelgrims, 2001, p.55). Other studies covering the pre-2010 period also show significantly lower proportions of women: 28.6 percent in Ireland (Connaughton, 2010) and 28.4 percent in the United Kingdom (Yong & Hazell, 2014).

At a global level we do not see this clear trend in our data. For example, if we look at our data for the Dewael government, we arrive at a proportion of women of 38.74 percent, a seemingly large difference from Pelgrims' results. Several observations should be made here. First, this is the smallest n in our entire sample, 66, which means that we have identified about 7 more women than Christophe Pelgrims. Secondly, the above observation applies: we most likely found the younger cohort of the Dewael government on LinkedIn. This cohort belongs to a generation in which access to education and the labour market was more equal than for the older cohort of the Dewael government. While Pelgrims had access to the entire population to sample, we probably got disproportionately more people from the younger cohort in our sample. These points should be considered when working with the dataset. Finally, an important difference is that our global view includes all MAs, including those with executive or supportive status. As mentioned earlier, MCs are hierarchical organisations where the proportion of women decreases along with the seniority

of the position (Taflaga & Kerby, 2020).

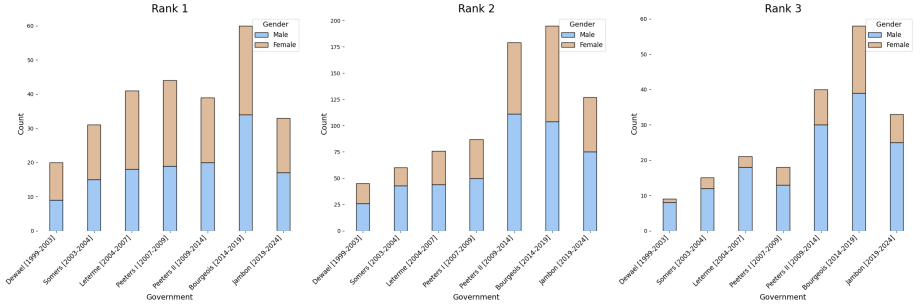

Figure 3: Gender split by hierarchical rank, per government.

It is important to include seniority/grade of the position in this analysis. We coded three ranks for this analysis: rank 1 includes all executive, support and supplementary staff, rank 2 includes advisory staff and rank 3 includes chiefs of staff and vice chiefs of staff. Over time, this categorisation changes the perspective sensitively. For executive and support staff in rank 1, we arrive at a proportion of 49.05 percent women. For the advisory staff in rank 2, we arrive at a proportion of 39.28 percent women. Finally, for rank 3, we arrive at a proportion of 23.89 percent women. Figure 3 lists these proportions across governments. Here we can detect mild trends, in that rank 2 and rank 3 in more recent governments move towards (but never reach) gender parity, with a setback in the Jambon government.

3.3 Age

Although age is not often included as a central/explanatory factor in the analysis of ministerial advisers and their backgrounds, there are several works that include this variable descriptively (see Martinache (2019) for a study where age is the focus). As with gender, date of birth is not directly available in the data. However, it can be estimated from the career data using the educational background. For MAs who mention their high school, we take the end date of this and subtract 18 to arrive at the date of birth. If there is no information about high school, we look for the first Master's degree and subtract 23 from this. If there is no information about this, we look for the first Bachelor's degree and subtract 21 from this. Using this method, we arrived at an estimate of the year of birth for 576 individuals out of 754 individuals.

Across our entire sample, the estimated median age at which an MA starts their position is 33 years. This seems to be in line with other results, listed in Maley (2023, pp. 391 - 392): in the UK, the median age is 34 years (Yong & Hazell, 2014, p. 193), in the Netherlands xx years (van den Berg, 2018) and on the federal level in Belgium the majority of the MAs is in the 35 to 50 age group (Brans et al., 2017; Gouglas et al., 2015). Likewise, in France the majority of

MAs are in the age group 30 to 40 years for the Hollande, Mitterand and Sarkozy governments (Martinache, 2019, p. 810). In Figure 4, we show the distribution of age across different governments. The more recent the government, the more the age distribution shifts upwards. This is not due to a recruitment pattern but to what we described earlier about gender: the longer ago, the less likely the older staff are to be on LinkedIn.

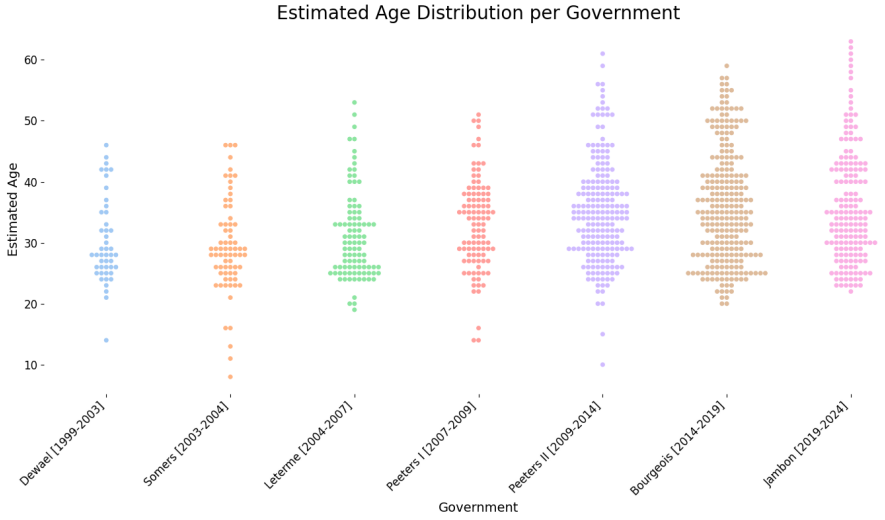

Figure 4: Estimated age distribution per government. Note that there are a few individuals with an unrealistic age estimate, due to errors in the education data (an error estimated to occur in 1.8 percent of datapoints). We do not delete these errors since they are part of the data as we found it.

Finally, when we put the age distribution over the seniority of the position, the results are as expected. Using the same mapping as for gender, for rank 1 (administrative/support staff) we arrive at a median starting age of 28 years. For rank 2, the advisory staff we arrive at an initial age of 32 years and for rank 3, the (vice) chiefs of staff at a median age of 39.5 years.

3.4 Education

Regarding the variable education, it is commonly pointed out that MAs are a relatively highly educated group (Maley, 2023, p. 392). In France, a significant proportion of MAs come from a so-called Grande Ecole (Alam et al., 2019, p. 812), in the UK from either Cambridge or Oxford (Goplerud, 2015, p. 336). The same is also true for our sample. Table 4 shows that as many as 76.56 percent of the entire sample obtained a Master's degree as their highest degree, just taking into account the previously mapped rank 2 and 3 that number rises to 81.07 percent. Combined with the PhD holders, 88.21 percent of the consulting or managing staff have completed a university degree. On top of that, these holders of Master's degrees often do not stop at one degree, 41.20 percent have two or

more Master's degrees, often in the form of an additional MBA or Master's in (Public) Management after the first master's. These results are in line with Walgrave et al. (2004, p. 12) previously mentioned survey for Belgium, which showed that at the time 81 percent of MAs held a university degree, 33 percent more than one and 7 percent obtained a PhD.

Table 4: Relative Counts of Highest Degrees

Degree	**PhD**	**Master**	**Bachelor**	**Other**	**Unknown**
Overall (%)	6.97	76.56	10.24	3.41	2.82
Rank 2 & 3 (%)	7.14	81.07	7.32	2.32	2.14

In terms of the subject area in which these Master's and PhD degrees are located, the results as coded in our dataset fall within expectations. Listed in Table 5, Social sciences top the list with 35.82 percent followed by Arts and Humanities (19.23 percent) and Business and Economics (18.15 percent). These results are largely in line with Krajňák et al. (2020, p. 14), although the number of Law degrees in particular seems to be slightly lower in our sample. Similarly, the fact that this subject area only comes in place four may intuitively come as a surprise but is due to the fact that the first three categories cover a wider range of fields of study.

Table 5: Relative Frequencies of Subject Areas for Master and PhD Degrees

Field	**Relative Frequency (%)**
Social Sciences	35.82
Arts & Humanities	19.23
Business & Economics	18.15
Law	17.19
Life Sciences	4.93
Natural Sciences	3.85
Unknown	0.84

3.5 Pre-cabinet experience

Finally, we turn our attention to career variables. Several authors have examined the professional sectors from which MAs originate prior to their appointments in MCs, exploring various motivations for this focus (Askim et al., 2021; Bellon et al., 2019; Daho & Gally, 2018; Rouban, 2012; Silva, 2017). Our dataset includes a total of 3,074 career positions that precede a role in the MC. This figure encompasses some previous cabinet positions, as there are MAs who have served in multiple cabinets, albeit under different governments or ministers. On average, an MA holds 2.6 positions before assuming a cabinet role, which corresponds to an average of 10.6 years of experience prior to their cabinet

Table 6: Pre-cabinet, Relative Frequencies across Different Sectoral Categories over Governments

Label	Global(%)	Dewael	Somers	Leterme	Peeters I	Peeters II	Bourgeois	Jambon
Outsiders	**36.68**	**31.70**	**29.92**	**24.56**	**33.00**	**43.21**	**43.85**	**36.28**
Private	13.68	8.92	10.13	8.71	11.54	12.86	19.20	16.75
Civil Soc. & NGO	10.71	7.07	6.37	7.13	10.80	13.84	13.66	9.06
Academia	7.42	7.54	8.20	5.81	6.92	10.01	5.85	7.29
Media	2.71	2.90	3.14	1.27	0.72	4.58	3.66	1.29
Internat. Org.	2.15	5.28	2.09	1.64	3.01	1.92	1.48	1.88
Partisan	**24.80**	**7.94**	**18.66**	**25.49**	**31.50**	**19.26**	**24.90**	**36.58**
Cabinet (FLA)	13.83	1.47	15.34	13.97	21.13	9.07	13.86	18.06
Legislature	3.65	4.87	1.80	3.43	2.43	3.33	4.35	4.96
Central Party	2.98	0.00	0.48	2.93	2.46	2.86	3.18	6.11
Cabinet (Other)	2.48	0.00	1.03	3.28	3.42	2.27	1.95	3.99
Local Politics	1.85	1.61	0.00	1.87	2.07	1.73	1.57	3.46
Insiders	**17.32**	**12.63**	**17.24**	**14.90**	**12.78**	**20.49**	**18.11**	**19.62**
Civil Service	17.32	12.63	17.24	14.90	12.78	20.49	18.11	19.62
Other	**21.20**	**47.72**	**34.18**	**35.05**	**22.72**	**17.04**	**13.14**	**7.52**
First job	18.46	46.38	32.69	33.58	20.55	14.59	8.61	4.12
Other[4]	2.58	0.14	1.49	1.18	2.18	2.38	4.45	3.32
Unknown	0.16	1.21	0.00	0.29	0.00	0.07	0.08	0.09

appointment. Table 6 provides the distribution of this pre-cabinet experience across various sectors and governments. For the purposes of this research note, we have grouped our pre-coded sectors into the categories defined by Meyer-Sahling (2008): insiders, outsiders, and partisans (Maley, 2023; Silva, 2017).

A key observation from our analysis is the stark contrast between our findings and those of Silva (2017), who also utilized Meyer-Sahling's classification when examining Portuguese MA recruitment. While we identified 17.32 percent of the Flemish MAs as insiders, Silva (2017, p. 386) reported that 71.78 percent of Portuguese MAs originated from the civil service. Furthermore, our study found that 24.80 percent of Flemish MAs were partisan, in contrast to the mere 2.88 percent of partisan MAs identified by Silva in Portugal. These discrepancies suggest that this classification is highly sensitive to national and cultural variations, which are reflected both in coding practices and in the actual recruitment processes. One significant distinction between Belgium, including Flanders, and other countries is the prominence of civil society organizations (CSO) within its neo-corporatist framework (Jahn, 2016; Pauly et al., 2021), leading to a relatively high proportion of MAs coming from a CSO or NGO.

Additionally, the strong influence of partitocracy in Belgium and Flanders (De Winter, 2013) may explain the greater emphasis on political party affiliation in recruitment, compared to the situation in Portugal. Finally, an important side-note is that our inclusion of previous cabinet positions in this count contributed to 50 percent of the size of the partisan group.

Finally, it is important to note that nearly a fifth of the cabinet positions was a first job, accounting for 18.46 percent of the sample. However, caution should be exercised in interpreting this figure, as it is challenging to determine whether this was truly their first job or merely the first position listed on LinkedIn. Interestingly, the data indicates that the earlier the government, the higher this proportion tends to be, likely due similar to the mechanisms observed earlier with gender and age. In contrast, Meert and Brans (2021, p. 30) reveals that in the Belgian German-speaking community, as many as 36.8 percent of MAs transitioned directly from college to their cabinet roles.

3.6 Post-cabinet experience

The career after the time in the ministerial cabinet has also been the subject of research in different contexts in different ways (Askim et al., 2021; Goplerud, 2015; Orchard et al., 2024; Sawicki & Mathiot, 1999; Sellers, 2014; Wilson, 2016). Broadly speaking, there is particular interest in the 'rewards' that MAs may or may not achieve after passage through a MC. Revolving-door practices, the stepping-stone function of the ministerial cabinet or, in the French part of the literature, the practice of pantouflage are sought. Investigating these specific phenomena would be beyond the scope of this research note (but is certainly possible based on the dataset). We limit ourselves to a brief description of the data we have concerning the post-cabinet career. Our dataset contains a total of 3,902 post-cabinet positions, yielding an average of 3.38 positions per MA following their cabinet tenure. Given that data collection occurred while the Jambon government was still in office, it is unsurprising that a significant proportion of individuals had not yet indicated their next job on LinkedIn, with 50.91 percent of such cases for this government. Overall, this figure stands at 12.82 percent. While a more detailed analysis is warranted, some preliminary observations can be made. The proportion of MAs transitioning to the private sector (12.29 percent) is slightly lower than the proportion of those who entered from it (13.68 percent), as shown in Table 6. This suggests that Flemish MCs may function as revolving doors for those coming from the private sector. However, the proportion of MAs moving into the civil service (24.91 percent) exceeds the proportion who originated from it (17.32 percent), indicating that cabinet positions may serve as stepping stones to desirable roles within the public sector. Additionally, it is noteworthy that while board positions were negligible in the pre-cabinet phase (Table 7), they constitute 5.94 percent of post-cabinet roles. Civil society organizations (CSOs) also maintain a relatively strong presence, accounting for 11.94 percent of post-cabinet careers. Further research, particularly at the individual career level, is needed to provide a more

Table 7: Post-cabinet, Relative Frequencies across Different Sectoral Categories over Governments

Label	Global(%)	Dewael	Somers	Leterme	Peeters I	Peeters II	Bourgeois	Jambon
Outsiders	**36.20**	**34.43**	**48.66**	**36.42**	**43.12**	**40.01**	**37.51**	**16.13**
Private	12.29	11.40	17.73	13.09	17.47	11.18	11.50	6.94
Civil Soc. & NGO	11.94	10.63	14.27	7.89	15.85	14.91	12.99	5.32
Board	5.94	6.09	8.14	7.61	4.35	6.51	7.13	2.09
Academia	3.65	5.73	4.87	4.48	4.02	4.19	3.06	1.18
Internat. Org.	1.55	0.41	1.87	2.82	1.43	2.04	1.32	0.59
Media	0.83	0.18	1.79	0.53	0.00	1.18	1.50	0.00
Partisan	**26.07**	**26.17**	**24.50**	**32.53**	**26.44**	**25.59**	**29.51**	**17.31**
Cabinet (FLA)	12.36	7.44	9.72	12.12	11.48	12.34	16.74	10.63
Local Politics	5.63	5.93	6.17	8.22	5.78	4.92	5.80	3.75
Legislature	4.25	6.26	5.06	4.79	4.60	4.80	4.03	1.78
Cabinet (Other)	2.43	3.51	2.00	5.97	3.24	1.73	1.66	0.86
Central Party	1.40	3.02	1.55	1.43	1.34	1.81	1.29	0.30
Insiders	**24.91**	**32.82**	**22.76**	**27.41**	**27.47**	**29.44**	**22.81**	**15.66**
Civil Service	24.91	32.82	22.76	27.41	27.47	29.44	22.81	15.66
Other	**12.82**	**6.59**	**4.07**	**3.64**	**2.98**	**4.96**	**10.17**	**50.91**
No Next	11.53	4.41	2.91	2.26	2.07	3.02	9.05	50.30
Other	1.01	1.97	0.86	1.38	0.91	1.34	0.70	0.48
Unknown	0.28	0.21	0.30	0.00	0.00	0.59	0.41	0.14

nuanced understanding of these career transitions.

4 Conclusion

The dataset we presented encompasses 754 Flemish MAs from 1999 to 2020, offering a comprehensive look at their professional and educational backgrounds. The gender distribution shows that 39.05 percent of MAs are female, with significant variation across ranks: women constitute 49.05 percent of executive and support staff, 39.28 percent of advisory staff, and only 23.89 percent of chiefs and vice chiefs of staff. In terms of education, 76.56 percent of MAs hold a master's degree, with 41.20 percent having multiple advanced degrees, often including MBAs or degrees in public management. The dataset also reveals that MAs typically have 2.6 positions and 10.6 years of experience before joining a cabinet, with 18.46 percent of them starting their careers directly in these roles. Post-cabinet, MAs frequently transition into the civil service (24.91 percent) or the private sector (12.29 percent), reflecting the suggestion of the MC as a

stepping-stone.

While the methodology employed in this study provides a comprehensive dataset on the career paths of Flemish ministerial advisors, we think it is important acknowledge potential biases inherent in the approach. The reliance on LinkedIn profiles as a primary data source introduces a selection bias, as not all advisors may have an active or complete profile on the platform. This is particularly evident in the overrepresentation of younger cohorts and more recent governments, whose members are more likely to use LinkedIn. Additionally, the process of deduplicating and merging data from different sources, while rigorous, may still lead to errors or omissions, particularly when dealing with individuals with similar names or incomplete data. We believe this dataset can be used for several research designs, both in single-case studies and international research. In addition, we also believe that interesting research can emerge from combining this dataset with other (digital) sources such as media archives. As described earlier, this dataset consists of several layers: there are the government lists and LinkedIn profiles, there is the coded dataset, and there are the various transformations we used to obtain these descriptives. Finally, just as the dataset is freely available, the methodology is also freely available and reusable for any other case.

References

Achin, C., & Dulong, D. (2019). Au-delà des apparences : la féminisation des cabinets ministériels durant la présidence Hollande. *Revue française d'administration publique*, *N° 168*(4). https://doi.org/10.3917/rfap.168.0787

Alam, T., Le Mazier, J., & Sawicki, F. (2019). Quarante ans d'enquêtes prosopographiques sur les membres de cabinets ministériels: quelles problématiques pour quels résultats? *Revue francaise d'administration publique*, (4), 751–769.

Aldrich, A. S. (2018). National political parties and career paths to the European parliament. *JCMS: Journal of Common Market Studies*, *56*(6), 1283–1304.

Askim, J., Karlsen, R., & Kolltveit, K. (2021). Public Office as a Stepping-Stone? Investigating the Careers of Ministerial Advisors. *Political Studies Review*, *19*(4), 539–557. https://doi.org/10.1177/1478929920906991

Atkins, J., Heppell, T., & Theakston, K. (2013). The rise of the novice cabinet minister? The career trajectories of cabinet ministers in British Government from Attlee to Cameron. *The Political Quarterly*, *84*(3), 362–370.

Bach, T., & Hustedt, T. (2023). Policy-making in the executive triangle: a comparative perspective on ministers, advisers, and civil servants. *Handbook on Ministerial and Political Advisers*, 338.

Bellon, A., Collas, T., & Mayance, P. (2019). Boulevards et chemins de traverse: les carrières des collaborateurs de l'exécutif (2012-2014). *Revue française d'administration publique*, (4), 875–896.

Bíró-Nagy, A. (2019). The career paths of central European MEPs. Political experience and career ambitions in the European parliament. *Romanian Journal of Political Sciences*, *19*(1), 87–114.

Blick, A. (2004). People who live in the dark. *(No Title)*.

Botella, J., Teruel, J. R., Barberà, O., & Barrio, A. (2010). A new political elite in Western Europe? The political careers of regional prime ministers in newly decentralised countries. *French Politics*, *8*, 42–61.

Brans, M., de Visscher, C., Gouglas, A., & Jaspers, S. (2017). Political control and bureaucratic expertise: Policy analysis by ministerial cabinet members. In *Policy analysis in belgium* (pp. 57–78). Policy Press.

Brans, M., & Pickering, H. (2020). Government Ministers and Their "Special" Advisers.

Brösamle, K. J. (2012). Careering bureaucrats and bureaucrats' careers. *German Journal of Human Resource Management*, *26*(2), 195–198.

Carroll, B. W. (1996). Bureaucratic élites: Some patterns in career paths over time. *International Review of Administrative Sciences*, *62*(3), 383–399.

Claessen, C., Bailer, S., & TURNER-ZWINKELS, T. (2021). The winners of legislative mandate: An analysis of post-parliamentary career positions in Germany and the Netherlands. *European Journal of Political Research*, *60*(1), 25–45.

Connaughton, B. (2010). 'Glorified gofers, policy experts or good generalists': A classification of the roles of the Irish ministerial adviser. *Irish Political Studies*, *25*(3), 347–369.

Daho, G., & Gally, N. (2018). Le cabinet ministériel comme espace frontière. Les collaborateurs ministériels passés par la sphère privée sous la présidence de François Hollande. *Revue francaise d'administration publique*, *168*(4), 849–874.

De Winter, L. (2013). Parliament and government in Belgium: prisoners of partitocracy. In *Parliaments in contemporary western europe* (pp. 97–122). Routledge.

Goplerud, M. (2015). The first time is (Mostly) the charm: Special advisers as parliamentary candidates and members of parliament. *Parliamentary Affairs*, *68*(2). https://doi.org/10.1093/pa/gst033

Gouglas, A., Brans, M., & Jaspers, S. (2015). Political Advisers and Policy Making in Ministerial Cabinet Systems: the case of Belgium, Greece & the European Commission. *International Conference on Public Policy, Date: 2015/07/01-2015/07/04, Location: Milan*.

Hustedt, T., Kolltveit, K., & Salomonsen, H. H. (2017). Ministerial advisers in executive government: Out from the dark and into the limelight. *Public Administration*, *95*(2), 299–311.

Jäckle, S. (2023). What Comes after Cabinet? Post-Cabinet Careers of German Regional Ministers between 1945 and 2014. *Social Sciences*, *12*(11), 601.

Jahn, D. (2016). Changing of the guard: Trends in corporatist arrangements in 42 highly industrialized societies from 1960 to 2010. *Socio-Economic Review*, *14*(1), 47–71.

Krajňák, S., Staronova, K., & Pickering, H. (2020). Ministerial advisers in Slovakia: Profiles and career paths, 2010–2020. *Nispacee journal of public administration and policy*, *13*(2), 115–140.

Kroeber, C., & Hüffelmann, J. (2022). It's a long way to the top: Women's ministerial career paths. *Politics & Gender*, *18*(3), 741–767.

Lunding, J., Ellersgaard, C., & Larsen, A. (2020, August). The Craft of Elite Prosopography. https://doi.org/10.1007/978-3-030-45175-2{_}5

Maley, M. (2021). Problematic working conditions for female political staffers: What can be done? *Australasian Parliamentary Review*, *36*(2), 54–69.

Maley, M. (2023). The biographies of ministerial advisers: why and how gender and career trajectories matter. In R. Shaw (Ed.), *Handbook on ministerial and political advisers* (pp. 390–404). Edward Elgar Publishing.

Martinache, I. (2019). L'âge du cabinet: un révélateur des logiques de carrières et de hiérarchisations dans les entourages ministériels. *Revue française d'administration publique*, (4), 807–826.

Meert, A., & Brans, M. (2021). Les cabinets ministériels en Communauté germanophone et leurs membres (1999-2019). *Courrier hebdomadaire du CRISP*, (37), 5–56.

Meyer-Sahling, J.-H. (2008). The changing colours of the post-communist state: The politicisation of the senior civil service in Hungary. *European Journal of Political Research*, *47*(1), 1–33.

Moens, P. (2022). Professional activists? Party activism among political staffers in parliamentary democracies. *Party Politics*, *28*(5), 903–915.

Moens, P. (2024). Are political staffers out of touch with grassroots party members? Assessing congruence between professionals and volunteers. *Political Studies*, *72*(1), 303–321.

Ohmura, T., Bailer, S., Meiβner, P., & Selb, P. (2018). Party animals, career changers and other pathways into parliament. *West European Politics*, *41*(1), 169–195.

Orchard, D., Gouglas, A., & Pickering, H. (2024). Life after Whitehall: The career moves of British special advisers. *The British Journal of Politics and International Relations*, *26*(1), 149–169.

Palmer, F. (2021). Examining the career paths of members of European Parliament elected in the 2019 European Parliament election by the United Kingdom.

Pauly, R., Verschuere, B., De Rynck, F., & Voets, J. (2021). Changing neocorporatist institutions? Examining the relationship between government and civil society organizations in Belgium. *Public management review*, *23*(8), 1117–1138.

Pelgrims, C. (2001). *Ministeriële kabinetsleden en hun loopbaan: tussen mythe en realiteit.* Die Keure.

Pelgrims, C. (2003). Het ministerieel kabinet als rotatiepunt en meerwaarde in de loopbaan van de kabinetsleden. Een onderzoek binnen de kabinetten

van de Vlaamse Regering. *Tijdschrift voor Bestuurswetenschappen en Publiek recht*, *47*(8), 384–405.

Rouban, L. (2012). L'état à l'épreuve du libéralisme: Les entourages du pouvoir exécutif de 1974 à 2012. *Revue Francaise d'Administration Publique*, *142*(2). https://doi.org/10.3917/rfap.142.0467

Sawicki, F., & Mathiot, P. (1999). Les membres des cabinets ministériels socialistes en France: recrutement et reconversion. 2) Passage en cabinet et trajectoires professionnelles. *Revue française de science politique*, *49*(2), 231–264.

Searing, D. D. (2019). Junior ministers and ministerial careers in Britain. In *Pathways to power* (pp. 141–167). Routledge.

Sellers, A. (2014). Appendix 3: The post-government career of special advisers. *Special Advisers: WhoThey Are, What They Do and Why They Matter. Portland, OR: Hart Publishing*, 229–246.

Semenova, E. (2018). Recruitment and careers of ministers in Central Eastern Europe and Baltic countries. *Technocratic ministers and political leadership in European democracies*, 173–202.

Shaw, R., & Eichbaum, C. (2023). Introduction to the Handbook on Ministerial and Political Advisers. In *Handbook on ministerial and political advisers* (pp. 2–12). Edward Elgar Publishing.

Silva, P. (2017). Political advisers in Portugal: Partisanship and loyalty in policy processes. *Public Administration*, *95*(2), 378–392. https://doi.org/https://doi.org/10.1111/padm.12309

Taflaga, M., & Kerby, M. (2020). Who Does What Work in a Ministerial Office: Politically Appointed Staff and the Descriptive Representation of Women in Australian Political Offices, 1979–2010. *Political Studies*, *68*(2). https://doi.org/10.1177/0032321719853459

Trangbæk, A. (2023). Does the cradle of power exist? Sequence analysis of top bureaucrats' career trajectories. *Governance*, *36*(2), 609–627.

van den Berg, C. (2018). Ministers, Minders and Mandarins. Edward Elgar Publishing. https://doi.org/10.4337/9781786431691.00013

van der Vlist, D. (2024). Parliament as a steppingstone? Patterns of post-parliamentary careers in The Netherlands between 1967 and 2017. *Acta Politica*, *59*(2), 245–262.

Veit, S. (2020). Career patterns in administration. In *Oxford research encyclopedia of politics*.

Veit, S., & Scholz, S. (2016). Linking administrative career patterns and politicization: Signalling effects in the careers of top civil servants in Germany. *International Review of Administrative Sciences*, *82*(3), 516–535.

Walgrave, S., Caals, T., Suetens, M., & De Swert, K. (2004). *Ministerial cabinets and partitocracy: A career pattern study of ministerial cabinet members in Belgium*. Citeseer.

Wilson, R. P. (2016). Trust but verify: Ministerial policy advisors and public servants in the Government of Canada. *Canadian Public Administration*, *59*(3), 337–356.

Yong, B., & Hazell, R. (2014). *Special Advisers: Who they are, what they do and why they matter*. Bloomsbury Publishing.

A GPT4 Prompts

A.1 Prompt for parsing career positions

- You are a helpful assistant
- The user sends you a PDF resume in text format. You should parse this file and return a JSON file in the following format:{"experience":["job title": , "workplace": , "startDate", "endDate: ","jobDescription: "}]}. ADHERE TO THIS FORMAT, THE KEYS AND ADD NO TEXT AS YOUR RESPONSE WILL BE USED BY A PARSER.
- This is the PDF text: [Insert raw LinkedIn PDF file]

A.2 Prompt for parsing educational positions

- You are a helpful assistant
- The user sends you a PDF resume in text format. You should parse this file and return information on their education in a JSON file in the following format:{education:[degree: , institution:, fieldOfStudy: , startDate: , endDate: }]}.The 'degree' field is exclusively meant for titles such as 'Master, PhD, Bachelor,.. ADHERE TO THIS FORMAT, THE KEYS AND ADD NO TEXT AS YOUR RESPONSE WILL BE USED BY A PARSER
- This is the PDF text: [Insert raw LinkedIn PDF file]

B Software Platform Screens

Screenshots from the software platform

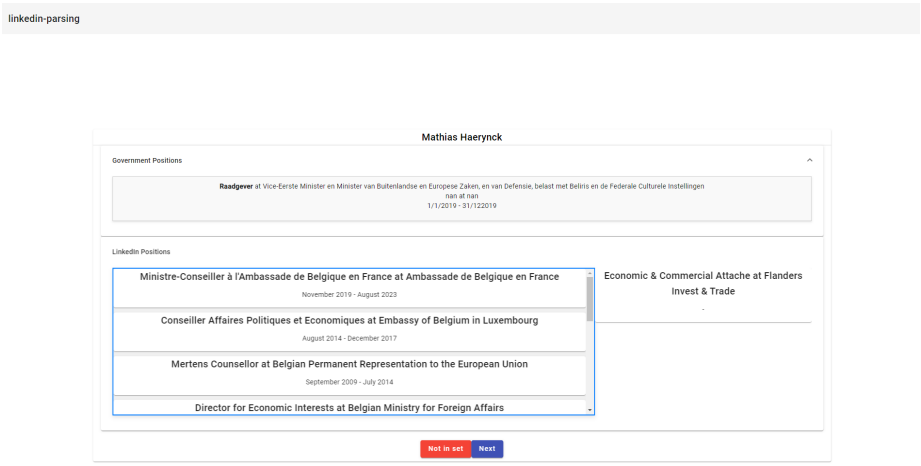

Figure 5: Screen 1: Selecting the LinkedIn Profile

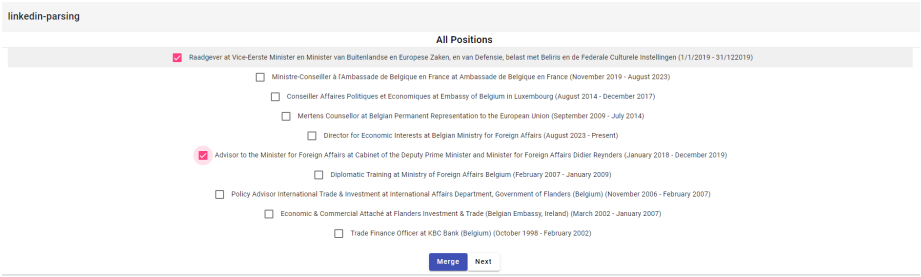

Figure 6: Screen 2.1: Merging Career Positions

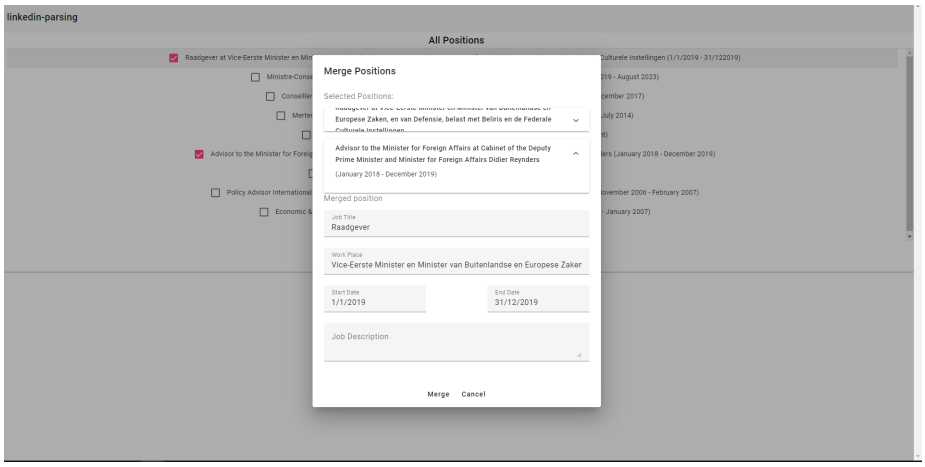

Figure 7: Screen 2.2: Merging Career Positions

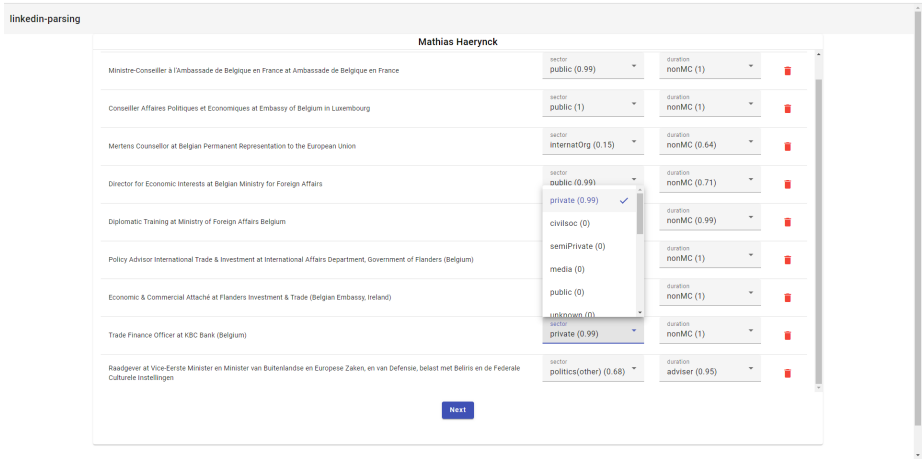

Figure 8: Screen 3: Coding Career Positions

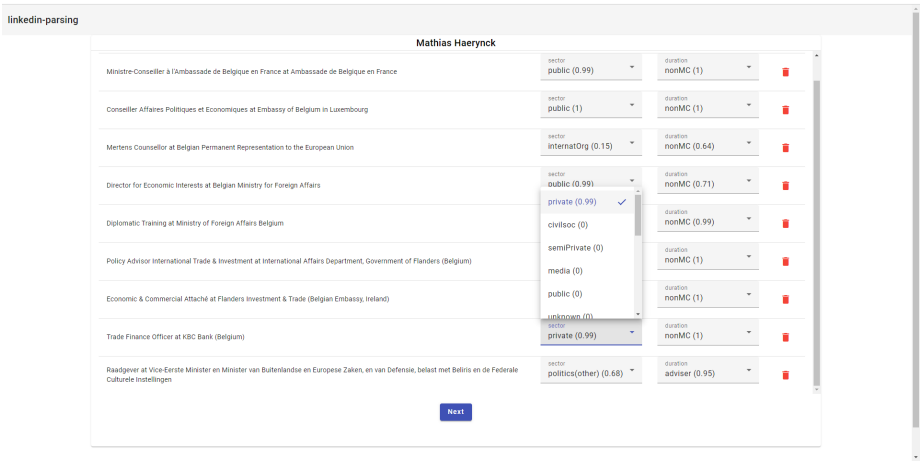

Figure 9: Screen 4: Coding Education Positions

C Sector Codes

Table 8: Sample Data Overview

Code	Dataset Label	Description
Private	private	All positions in private sector, liberal professions included.
Civil Service	public	All positions in the public administration on all levels of government in Belgium. We used a broad definition, including teachers, the army, offices at the local level etc.
Cabinet (FLA)	politics(gov)	Positions in a Flemish ministerial cabinet
Cabinet (Other)	politics(fed)	Positions in a ministerial cabinet on another level of government in Belgium, such as the federal or Brussels government.
Central Party	politics(central)	Positions in the "central" party organization, see **<empty citation><empty citation>**
Legislature	politics(leg)	Positions for a political party in parliament. If not for a political party these positions are Civil Service.
Local Politics	politics(local)	Positions for a political party at the local level: in the city counsel or in a local / non-central party organization
Civil Soc. & NGO	civilsoc	Positions in a CSO or NGO, see **<empty citation><empty citation>**. Also includes unions.
Academia	academia	All positions in academia, PhD students and administration included.
Internat. Org.	internatOrg	All positions in organisations at the supra-national level such as the EU, WTO, NATO, ..
Media	media	All positions in the media sector. Also includes positions at the Flemish public broadcaster (VRT).
Board	board	All posititions in a committee or board, public and private.
Other	unknown	Positions that do not fall under any of these categories
Unknown	unknown	All positions that were impossible to label due to parsing errors in earlier steps or a lack of information on LinkedIn