Crowds and smiles: Visual opportunity structures and the communication of European political leaders during the Covid-19 pandemic

Abstract

The growing interest in political leaders' visual communication often emphasizes specific visual features without focusing on the driving factors behind these strategies. Our study introduces the Visual Opportunity Structure (VOS) theory, aiming to explain the use of specific visual elements based on their suitability within the socio-political context. We examined the COVID-19 pandemic, analyzing a large dataset (n=73,379) of Instagram posts by 28 European national party leaders coded through automatic facial and emotional recognition algorithms. The findings reveal a negative link between the use of inappropriate visual features during pandemic waves, like depicting happiness and groups of people, and the severity of the pandemic's impact. Political leaders significantly reduce these "inappropriate" visuals during severe waves, reintroducing them in calmer periods. This trend is particularly pronounced among government party leaders. Our research not only unveils a pattern in the visual communication tactics used by political figures during the pandemic but also provides deeper insights into how visual strategies align with the broader context. By shedding light on these nuances, the study contributes to a more comprehensive understanding of visual political communication online.

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1 Introduction

In the past decade, social media provided politicians with new possibilities for engaging with their constituents. These platforms allowed political leaders to communicate their messages through widely used channels, such as Facebook and Twitter, while also allowing them to optimize their communication campaigns at a fraction of the costs compared to traditional methods (Schill, 2012). Simultaneously, there has been a resurgence of interest in the *visual aspects* of politicians' communication strategies (Lilleker et al., 2019; Schill, 2012). While the significance of images in politics has long been a subject of study in political communication (Rosenberg et al., 1986), the proliferation of social media platforms, where the role of images is crucial (Lilleker et al., 2019; Bucy and Joo, 2021), has further heightened academic interest in this area.

The study of visual communication gained significant momentum with the rise of Instagram as a prominent social media platform for political engagement (Larsson, 2021). The surge in popularity of "political Instagram" is evident from the fact that the number of followers of EU politicians' Instagram profiles more than tripled between 2019 and 2021[1]. The advent of Instagram among the most employed platforms has accelerated the process of *personalization* and *emotionalization* (Van Santen and Van Zonen 2010) of politicians' communication: especially on Instagram, we have evidence that the communication style focuses on the figure of the party leader (Filimonov et al, 2016; Lilleker et al., 2019), usually surrounded by a crowd of their voters/supporters (Schill, 2012), and often engaged in pleasant activities (Ekman et al., 2017; Filimonov et al., 2016; Lilleker et al., 2019). So far, studies on the topic mainly focused on "establishing the facts" (Merton, 1993), by descriptively assessing how politicians tend to self-portrait themselves (see the pioneering works of Peng, 2021, Farkas

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[1] Analysis of the authors (see Supplemental material (SM) 1).

and Bene, 2021, Haim and Jungblut, 2021) and by producing taxonomies of these strategies. The determinants driving politicians' communication strategies, and how these relate to the socio-political environment in which they are embedded, have instead been overlooked. In this work, we will ask ourselves two main questions: do politicians' visual strategies follow particular patterns, choosing specific visual features instead of others? And what are the environmental determinants of these choices?

To answer these questions, we introduce the concept of *visual opportunity structure* (VOS). We borrow the concept from the discursive opportunity structure (DOS) theoretical argument, developed in the social movements' communication literature (Koopmans and Statham, 1999; Koopmans and Olzak 2004; McCammon, 2013) and more recently adapted to top-down forms of political communication (De Bruycker and Rooduijn, 2021; Ernst et al, 2019; Salmela and von Scheve, 2018). According to the DOS framework, political actors employ specific *discursive* tools after evaluating the appropriateness of these within their social, political, or media environment. Our approach focuses on how specific *visual* features can be seen as legitimate and appropriate, according to the environment in which political actors are embedded and their position in the political landscape. We argue that, given the increasing importance of the visual component in political communication, political actors will be more careful in selecting visual features that they evaluate as appropriate. The COVID-19 pandemic offered us an ideal opportunity to test our theoretical framework. The pandemic represented an unprecedented exogenous shock in Europe that rapidly impacted how politicians and institutions communicated their policies and activities (Lilleker et al., 2021; Castro Seixas, 2021). We contend that visual communication strategies have also been affected by the new socio-political landscape shaped by the crisis. We will focus on two features that are expected to change dramatically in the face of the pandemic: the presence of positive emotionalization and the depiction of groups of people in the leaders' visual communication (see Jost, 2022).

Under normal circumstances, these two features are widely used by European leaders in their communication: smiles are used to portray a pleasant, confident image of the leader (Masch et al., 2021), while the representation of groups of people and crowds is employed to portray the leader as a "man/woman of the people", surrounded by a (large) group of supporters (Schill, 2012). The pandemic, however, rapidly overturned the semantic context of the political arena. A smiling leader might be perceived as inappropriate when hundreds of people are dying every day because of a lethal virus. Similarly, the depiction of groups or crowds became unsuitable (and even suggestive of illegal activities), given the short-range aerosol spread dynamic of the Coronavirus (World Health Organization, 2020). The COVID-19 pandemic therefore represents a unique opportunity to uncover politicians' visual strategies of communication and how they adapt to a new, uncertain environment. We argue that this sudden change led politicians to drastically restructure their communication, evaluating the structure of opportunities and constraints engendered by the pandemic, and reducing the employment of those visual features. Additionally, we produce testable hypotheses concerning the position in the political landscape of a leader: consistent with existing literature, we argue that government leaders, given their heightened institutional responsibility, will be considerably more cautious in communicating visual features that may be perceived as inappropriate by the audience.

To test our framework, we collected a dataset comprising all the Instagram posts that the major political European leaders (EU-27 + the UK) published between March 1, 2019, and December 31, 2021 (N=73,379). The data start from one year preceding the crisis and cover at least the first three waves of the COVID-19 pandemic. All the images posted by European politicians have been subjected to an automatic analysis performed with the Microsoft Computer Vision API and Face API (see Peng, 2021), aimed at identifying the two features that are more likely to change in the wake of the pandemic: a positive message expressed by the image (the presence of smiling faces) and what we call the "group archetype" (the presence

of groups of people). We show results confirming the VOS argument: the two features occur less during the pandemic period compared with the pre-pandemic one and the decrease in the employment of these communication features is more pronounced during the hardest phases of the pandemic. Additionally, government leaders displayed a more substantial reduction in positive emotionalization compared to opposition leaders.

2   Visual political communication and the pandemic crisis: conceptualizing the Visual Opportunity Structure

Starting from the pioneering work of Rosenberg and colleagues (1986) that showed that a candidate's pictures can produce a representation of their personality, their fitness for a public office on the citizens, and, ultimately, can affect their likelihood of being voted (see also Lilleker, 2019; Grabe and Bucy, 2009), the significance of the visual element in political communication has been extensively explored by the literature.

In this study, we specifically focus on two visual features that are highly relevant to our objectives: "positive emotionalization" and what we refer to as the "group archetype". Pundits and academics have long identified the central role of emotions in political communication (see Brader, 2020; Valentino et al., 2011). Emotional appeals can also be conceptualized in visual terms: previous literature (Sampietro and Sánchez-Castillo, 2020; Bast, 2021; Farkas and Bene, 2021) shows, for instance, that political leaders' emotionalization of visual communication tends to be positive, particularly when we consider the most important non-verbal cue of positive emotionalization: smiling. This finding aligns with previous research highlighting that smiling leaders tend to be more favorably received by audiences compared to those displaying a serious demeanor (Horiuchi et al., 2012; Masch et al., 2021; Peng, 2021).

The second visual tool of interest is what we call the "group archetype" (also known as the "crowd archetype", Schill, 2012), a much-employed representation that sees leaders

surrounded by a crowd of supporters (Glassman and Kenney, 1994; Grabe and Bucy, 2009; Schill, 2012). According to Dobkiewicz (2019), the depiction of crowds and groups of people signals an attempt to decrease the distance between the leaders and their followers - particularly during election campaigns (Haim and Jungblut, 2021) – so that leaders are more likely to be perceived as "men/women of the people".

The COVID-19 crisis brought a swift transformation in the semantic context surrounding various actions in which politicians were typically depicted in their visual communications. Images capturing smiles, hugs, crowds, and groups, which were once considered commonplace before the pandemic, suddenly were deemed inappropriate, hazardous, or even illegal. Considering this dramatic event, our Visual Opportunity Structure (VOS) theoretical framework aims to provide a set of testable hypotheses to account for its consequences.

2.1 The VOS argument

We derive the VOS argument from the political-sociological literature, and, particularly, from the political and discursive opportunity structure theories (POS and DOS, Koopmans and Statham, 1999; Koopmans and Olzak, 2004; Kriesi, 2004; Tarrow 1994). These theoretical frameworks, predominantly employed in the study of social movements' communication strategies, suggest that the ability to mobilize citizens around a particular issue is influenced by the constraints and opportunities inherent in the political, institutional, and media systems. The success of collective actors' claims is contingent on how these claims are perceived as sensible, realistic, and legitimate within the broader political environment (McCammon, 2013): when a specific discourse is broadly considered legitimate collective actors are encouraged to follow those communication paths (Koopmans and Olzak, 2004). Several factors contribute to the actors' perceptions regarding the viability of a particular

communication strategy. Sometimes changes in society's general cultural schemas can render a specific strategy successful, while, in other cases, the viability of various communication options is directly influenced by gatekeepers of political information flow, such as journalists and the media.

Although the POS/DOS arguments have been mainly employed to explain the actions and communication strategies of social movements, several attempts to apply this theoretical framework to top-down political communication strategies have been made (see De Bruycker and Rooduijn, 2021; Ernst et al, 2019; Olivas Osuna and Rama, 2021; Salmela and von Scheve, 2018). Politicians' and social movements' communication is, after all, bounded by similar political and discursive opportunity structures. This means that politicians have to deal with the legitimacy and, more in general, the appropriateness of their claims, just like less powerful and influential political actors (Koopmans and Muis, 2009). Following this line of research, de Bruycker and Rooduijn (2021) observe that both populist and non-populist parties are more prone to express populist claims when an issue regarding European integration has been made salient by the media or civil society groups. Olivas Osuna and Rama (2021) claim that the COVID-19 crisis in Spain offered the radical right-wing party VOX the opportunity to shift from a traditionally conservative discourse to an aggressive populist one, adopting "a highly antagonistic and moral rhetoric to attempt to discredit the Government, gain visibility, and harvest political support from dissatisfied citizens" (Olivas Osuna and Rama, 2021: 14).

How can this theoretical structure be translated into visual terms? In first approximation, we might state that the VOS approach argues that *the visual strategies of political actors are conditioned by what is considered socially and politically appropriate by a specific audience at a given moment*. The VOS is an intrinsically dynamic argument, suggesting that changes in the environment lead to changes in visual strategies. Notice that the VOS argument is not conceptualized as the opportunity to visualize – rather than speak or write

– a message (which is influenced by the architectures and affordances of a specific medium, see Bossetta, 2016), but rather concerns the consequences that changes in the environment have specifically on the visual component of an actor's communication.

In the literature, both the visual and the written/spoken elements might be intended as part of the broader concept of "political discourse" (Lou, 2017). How leaders portray themselves, their facial expressions, and, in general, many of the elements that contribute to producing the visual framework of a leader's communication can be defined as full-fledged discursive strategies. If visual elements were really indistinguishable from other discursive elements, the DOS would be sufficient in explaining visual strategies, and there would be no need for an additional argument to account for dynamics in visual communication choices. Rather, we argue that visual elements in political communication possess distinctive characteristics that necessitate an independent conceptualization.

The reason for our distinction lies in two characteristics that distinguish visual features from strictly discursive ones. First, visual political communication *is usually not exclusively political* (Bast, 2021). POS/DOS frameworks mainly consider the political aspects of actors' communication (Koopmans and Statham, 1999). However, visual political communication encompasses more subtle cues that do not necessarily convey a clear political meaning (Sampietro and Sanchez-Castillo, 2020). This theoretical distinction leads to a significant shift in empirical terms: to understand the patterns of change and stability in visual strategies, we cannot focus solely on the visual political elements that actors communicate. Rather, we must consider other elements (such as smiles or the presence of a crowd) that do not provide a straightforward political meaning (Bast, 2021).

Second, compared with spoken/written words, *pictures are not path-dependent*. Previous literature (e.g. Downs, 1957; Lynch and Madonna, 2013; Petrocik et al. 2003) argues

that political actors maintain some form of coherence in their (non-visual) communication, and even in employing consistent rhetoric over time. This means that political actors tend to present their discourse and maintain their argument in a quite coherent fashion over a certain period. Consequently, abrupt and substantial changes in the consistency of spoken or written words are rare occurrences (as inconsistencies may lead the audience to perceive political actors as less credible, see Downs, 1957). Visual communication does not follow such a pattern: political actors, indeed, tend to switch easily from images that tackle serious political issues to scenes in which they are portrayed in a private/informal setting (Haim and Jungblut, 2021).

Visual communication, thus, presents differences from "strictly discursive" features and entails its own set of guidelines that inform leaders on whether specific features should be employed (being appropriate) or avoided (being inappropriate). As for the latter case, we can imagine several naive examples of the inappropriateness of visual features that politicians try to avoid, such as portraying themselves as excessively rational/cold during a dramatic event, or, conversely, too emotionally intense in a situation that does not require it (see Bucy, 2000); showing pictures of convivial dinners right after a dramatic event, or the representation of pleasant activities during a difficult time of the leader's party can be seen as additional examples of inappropriateness. In recent years, we witnessed several episodes where politicians suffered hard media backlash for presenting inappropriate visual cues. For example, Italian Democratic Party secretary Nicola Zingaretti received criticism after he posted a picture of himself having a drink with friends in Milan during the first days of the pandemic in Lombardy[2] (Horowitz et al., 2020; La Repubblica, 2020). Aside from COVID-related situations, in August 2019 Donald Trump had to face hard media backlash after being pictured smiling in his golf club just hours after a mass shooting (Perrone, 2019), showing how the inconsistency between

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[2] He was not engaging in any illegal activity since social distancing measures were not still employed by the Italian government at the time.

the leader's portrayed emotional state and the opportunity structure has negative consequences for politicians. Moreover, after the Nashville school shootings in March 2023, the media called out in outrage at a Republican representative for not removing an old picture showing his infant son embracing a gun (Gaudiano, 2023). The picture had been on Instagram since 2016, but the fact that it was not removed became relevant after the school shooting and the subsequent change in the visual opportunity structure. As a final example, we mention George W. Bush describing as a "huge mistake" (Wing, 2011) a photograph depicting him on the Air Force One looking down at the devastation brought by Hurricane Katrina. This photo reportedly drew criticism because it made the president look "detached and uncaring" (Wing, 2011) in the face of the tragedy.

FIGURE 1 HERE

At the supply-side level, the reason that pushes politicians to avoid these messages is straightforward: it is perfectly rational to ward off any visual cue that can displease part of their constituencies and/or be exploited by opponents as potential material for political attacks. The first aim of this contribution will be to investigate specifically the role that inappropriateness might have on the employment of visual features in politicians' communication strategies. Arguing this rationality criterion reveals a crucial element that we inherit from previous frameworks, namely, the fact that politicians exhibit a degree of *intentionality* and *strategic thinking* in modifying their visual communication strategies. Therefore, such changes in visual representations are not merely reactionary or incidental. Instead, they are, to some extent, deliberately organized to enhance the effectiveness of online communication strategies. We posit that these modifications in visual tactics are undertaken with specific goals in mind – primarily to optimize the impact and reception of their messaging within the digital public

sphere. Therefore, politicians are not passive actors merely responding to external stimuli; rather, they are active agents, consciously adapting their visual narratives to align with the perceived expectations and sentiments of their audience.

Partially related to this element, we might argue that the *position* of actors in the political landscape engenders relevant differences in politicians' visual strategies. Previous literature (Figenschou and Thorbjørnsrud, 2018; Fredriksson and Pallas 2016) stressed that politicians in government tend to be more careful in their communication strategies. Incumbents do not have at their disposal the same bouquet of communication strategies compared with their opposition counterparts, given their heightened institutional responsibilities that require more careful management and their enhanced visibility, which subjects them to greater scrutiny by public opinion than opposition leaders. Translating this argument in VOS terms, the inappropriateness of communication strategies employed by government leaders carries potentially greater costs compared to those of opposition leaders. The literature, so far, focused solely on the discursive aspect of the government-opposition asymmetries in communication strategies, taking into little account the possible differential attention that majority/minority leaders and politicians receive when employing specific visual features. We will test this additional element of our argument, observing whether a government/opposition asymmetry is present in leaders' communication when it comes to the inappropriateness with respect to the socio-political environment.

2.2 Case study and hypotheses

As argued above, the changes engendered by the pandemic led to a rapid change in the social norms usually shared in society. Activities previously considered usual, such as going outside, socializing with friends over a drink, or dancing without social distancing, became highly problematic within a matter of weeks following the new Coronavirus outbreak in

February-March 2020. People quickly internalized these changes, accepting narratives that aimed at increasing compliance with the new social norms (Mohamad, 2020; Jiang et al., 2022). According to the VOS argument, this societal transformation prompted a readjustment in politicians' communication strategies, where visual features that were previously considered normal and desirable suddenly became improper or even signaled illegal activities, particularly after the implementation of lockdown measures. According to the VOS argument, the visual communication of political actors operates within a cost-opportunity structure. From previous literature on visual political communication, we know that, in normal times, displaying positive emotionalization and/or crowds represents an opportunity to portray the image of a strong/self-confident/pleasant leader. The pandemic suddenly overturned this situation, shrinking this window of opportunity and making the employment of such features a cost.

As a result of our argument, we expect that the manifestation of positive emotionalization by political leaders, such as smiling, would produce a strong dissonance when hundreds of people are dying every day because of the Coronavirus and millions are subjected to lockdown measures. As a result, such a visual choice (which would be straightforward in normal times) might drive criticism from leaders' constituencies and political opponents. Given the possibility for leaders to easily change their visual political communication (by just avoiding pictures that depict positive emotionalization), our first hypothesis reads as follows:

H1. The likelihood of portraying positive emotionalization in politicians' images decreases during the pandemic period compared to the pre-pandemic period.

As widely recognized, it became evident from the early stages of the pandemic that the virus primarily spreads through short-range aerosol transmission. In response, institutions

promptly implemented measures to limit people's participation in crowded events, and in many cases, imposed lockdowns. This dramatic change in the everyday life of Europeans is a textbook case of the reduction in the opportunity to depict a crucial visual element, what we call the "group archetype". Consistent with our theoretical framework, we argue that while the group archetype presents an opportunity for positively portraying a leader in normal times, during the pandemic, it becomes a cost. Politicians displaying crowds in their visual communication could be seen as disregarding the importance of adhering to social distancing measures. As a result, we hypothesize that:

H2. The likelihood of portraying groups and crowds in politicians' images decreases during the pandemic period compared to the pre-pandemic period.

The expansion/reduction of the opportunities to portray specific visual elements can be further tested if we consider the COVID pandemic not as a single event, but rather as a dynamic process that has been depicted, pretty efficiently, in *waves*. Previous research demonstrated that COVID-19 infections and deaths display a degree of seasonality, with the virus having a greater impact during the cold seasons (Liu et al., 2021). After a relatively short-timed first wave, the number of infections/deaths lowered during the summer of 2020 and then rose again with a long wave (or two, see Cacciapaglia et al., 2021). A similar trend can be observed in late 2021, with a low death rate during the summer followed by an increase in infections and deaths during the autumn/winter.

We can expect that political actors will structure their visual communication consistently with the expansion/reduction of the dangers caused by COVID-19, by drastically reducing the employment of problematic visual elements – crowds and smiles – when the opportunity window shrinks (when the pandemic hits harder) and by increasing their

employment when the opportunity window widens (when the pandemic momentarily loses its strength). The third and fourth hypotheses thus read as follows:

H3. *The likelihood of portraying positive emotionalization in politicians' images decreases during periods when the pandemic hits more severely compared to the inter-wave periods.*

H4. *The likelihood of portraying groups and crowds in politicians' images decreases during periods when the pandemic hits more severely compared to the inter-wave periods.*

As stressed above, a relevant moderator of the top-down communication choices is the government/opposition status of politicians. Government officials tend to be more careful in choosing their communication strategies, given their institutional stance and their visibility, as some evidence on populist communication suggests (Swanson & Gherghina, 2023; Thomeczek, 2023). If the VOS argument holds, and, especially, if some form of intentionality and strategic reasoning is present behind politicians' choices, we can argue that leaders belonging to government parties will be more motivated to avoid publishing inappropriate content. Particularly during peak periods of the pandemic waves, actors belonging to parties represented in government (*government politicians*) will be prompter and more decisive in avoiding problematic visual elements in their communication compared with politicians belonging to parties that are not part of the government coalition at the moment they publish an image online (*opposition leaders*). H5 and H6, respectively focused on positive emotionalization and group archetype, will thus read as follows:

H5. *The effects hypothesized in H1 and H3 will be stronger for government politicians compared with opposition leaders.*

H6. *The effects hypothesized in H2 and H4 will be stronger for government politicians with respect to opposition leaders.*

3 Data and methods

We test our hypotheses using an originally collected dataset including all posts published by 157[3] political leaders[4] from the 27 EU countries and the UK, from March 1, 2019, to December 31, 2021, and employing automatic image and emotional recognition algorithms to detect the theoretically relevant features.

The data collection is composed of two steps: first, all posts on the Instagram profiles of the leaders have been downloaded via the CrowdTangle platform API (N=73,379)[5]. Second, we applied image recognition algorithms to the collected images, which allowed the detection of positive emotionalization and the presence of the group archetype.

Image recognition algorithms represent a subset of machine learning algorithms that produce, in an automated and replicable way, information on the images that the researcher subjects to them (for more information about the algorithms employed, see Joo et al., 2014; Joo and Steinert-Threlkeld, 2018). In particular, the algorithm used can analyze images in two ways that are useful to our aims. First, it traces all the smiling human faces in a picture. Second, it provides up to 10 "tags", namely words describing the content of the image. For instance, "cat" will be among the tags of an image where a cat is present, while "crowd" will be included when many people are portrayed (Joo and Steinert-Threlkeld, 2018; Boussalis et al., 2021;

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[3] The politicians selected are the party leaders of all the parties that elected at least one MP in the EU parliament and received more than 4% of the national vote in the 2019 elections. If a party experienced leadership changes, all those who led the party within the timeframe considered were included.

[4] For a list of the leaders, see SM2.

[5] Only posts containing images published in the feed were selected, thus excluding videos, Igtvs, Instagram stories, or reels (for the "carousels", the Instagram image gallery, only the cover image was included).

Masch, 2021; Peng 2018).

3.1 Dependent Variables

The two variables that we use as outcomes in our models are derived from the automatic visual recognition algorithms.

The first variable measures positive emotionalization by recognizing smiling faces in the image[6]. The algorithm produces a 0-1 scale in which 0 and 1 mean respectively "0%/100% confidence that the image contains a smiling face". As for this variable, we produced two sets of models. In the first (presented below), we recode the original variable as 1 when it scores over .5 and 0 otherwise. In the second (see SM3) we use the original measure provided by the algorithm, treating it as a continuous variable. The two sets of models do not present substantially different results.

The second dependent variable, tackling the group archetype, is based on the automatic tagging system outlined above. To identify the visual feature, we isolated the two tags that unequivocally indicate the presence of several people in an image ("group" and "crowd")[7]. In this case, we are persuaded that this represents a valid measure of what we are dealing with. If our argument holds, the likelihood of showing people who are near each other will drastically

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[6] It could be argued that smiles are not the sole element that can operationalize positive emotionalization. The Microsoft Vision algorithm, indeed, can gather a set of additional emotions. However, those other emotions seem not to be present in our data. A detailed analysis of other emotions and the possible theoretical implications related to automatic emotional coding can be found in SM9.

[7] A qualitative inspection of the images shows that pictures with two or more people who are near each other are tagged by the algorithm as a group or crowd.

reduce during the pandemic period[8].

3.2 Independent Variables

The main independent variable of our models testing H1 and H2 is a dichotomous variable indicating whether the post has been published before or after the pandemic (we select as the beginning of the pandemic the discovery of the first case in Europe, which dates to February 20, 2020). In models testing H3 and H4, we instead used a set of dummy variables indicating the month in which the post was published.

We also included a dichotomous variable indicating whether the leader is part of a government party. Therefore, this variable is set to 1 for all the posts published by a leader that, on the day the post was published, belongs to a party that is part of the government coalition and 0 otherwise. Further, we linked variables that trace the daily situation of the pandemic in every national context, as well as in the EU, in terms of deaths by COVID-19 (as detected by the official health authorities).

3.3 Control Variables

In our dataset, we linked every leader's account on Instagram with party-level information obtained through the ParlGov dataset (Döring and Manow, 2012).

All the models include a variable measuring the left-right placement of the leader's party, a variable measuring the strength of the same party in the most recent national election, a weekend dummy (0 for working days, 1 otherwise), and a country fixed effect[9].

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[8] We have qualitatively investigated the tagging accuracy isolating the "group archetype" and the positive emotionalization by coding manually a subset of posts of our dataset. Additionally, we compared the Microsoft vision algorithm with another state-of-the-art algorithm for facial recognition, Face++. Results confirm the validity of our measures and are available in SM4.

[9] For descriptive statistics regarding these variables, see SM1.

3.4 Models

We test our hypotheses by fitting eight logistic multilevel models, with posts nested into leaders' accounts. The first two models present, as dependent variables, the two dichotomous variables representing positive emotionalization and the group archetype, and have, as the main independent variable, the dummy indicating whether the post was published before or after the pandemic. Two other models use the month dummies instead. In that way, it is possible to investigate the over-time trends of the prevalence of specific visual elements, according to the succession of pandemic waves[10].

To test H5 and H6, the four above-mentioned models are fitted with an interaction between the relevant independent variables (indicating the pre-pandemic/pandemic period or the month of the publication of the post) and the government/opposition leader dummy variable.

4 Results

Figure 2 tests our first two hypotheses[11].

Figure 2 *HERE*

As for the predicted probability that an image portrays positive emotionalization, we see a drop in the employment of the feature of more than 12 points (from 42% of positive emotionalization recorded in the pre-pandemic period to 29% in the pandemic period). The predicted presence of crowds and groups of people in the images presents an even larger gap, with a drop of 15 percentage points (from 46% in the pre-pandemic period to less than 31% in

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[10] To further strengthen the methodological aspects of the paper, we have also added alternative models based on spline regressions (as in Hmielowski et al., 2020). Results, presented in SM10 produce substantially the same results that are presented in the paper, by also adding systematic significance tests the comfort us on the general interpretation of the results.

[11] See SM5 for the full regression tables of the models presented in section 3. SM5 additionally contains a discussion of results related to control variables.

the pandemic one). This evidence is consistent with the VOS argument: when the costs of publishing specific visual elements rise, political leaders drastically lower the likelihood of presenting those features in their communication.

Figure 3 and Figure 4 show predicted probabilities for the level of employment of the two visual features (the solid line) and the number of deaths in Europe per million inhabitants (the over-impressed bar graph). This representation allows for simultaneous visualization of the fluctuations in the opportunity window (i.e., the pandemic waves) and the corresponding responses of political leaders. It is thus possible to observe the relationship between the changing context and the communication strategies adopted by political leaders.

Figure 3 HERE

Figure 4 HERE

The two figures clearly show that patterns of employment of the visual features follow the VOS argument. Positive emotionalization and group archetype were consistently employed in the year before the pandemic, followed by a contraction during each pandemic wave and an expansion during periods when the pandemic impact was relatively lower (particularly observed during the summer). Overall, we might say that the empirical evidence sustains H3 and H4[12].

Figures 5, 6, and 7 show models with interactions to test H5 and H6. Figure 5 shows the drop in predicted probabilities of the two visual features by government/opposition status of the politician. From the left panel, we can see that, as expected, the drop in the employment of positive emotionalization during the pandemic is more pronounced among leaders in government. On the other hand, however, there is no significant difference between government and opposition leaders when it comes to the group archetype.

Figure 5 HERE

The pattern is further confirmed by Figure 6 and Figure 7, which provide the equivalent of the predicted probabilities in

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[12] It could be argued that focusing on the European Pandemic trend instead of the national trends might be misleading, especially because the pandemic waves were not (totally, see Cacciapaglia et al., 2021) aligned in all the countries considered. An additional piece of empirical evidence that tests H3-H6 more systematically exploits the comparative nature of the dataset. SM7 shows predicted probabilities for the last set of multilevel models, which include a 14-day moving average of the COVID death rate in each leader's national context. The results are substantially equal to those shown here.

Figure 3 and

Figure 4 with the fitted interaction between the month in which the posts were published and government/opposition status. Figure 6 shows that during periods of severe pandemic impact, all politicians tend to refrain from employing positive emotionalization in their visual communication. However, government leaders exhibit a more pronounced avoidance of this feature, displaying significantly lower rates of employment in both the first and second waves (in specific months, the government/opposition gap in positive emotionalization avoidance reaches 10 percentage points). In line with the findings presented in Figure 5, Figure 7 shows that there is no significant difference between government and opposition leaders regarding the employment of the group archetype feature. In sum, while H5 is supported by the data, H6 is not.

Figure 6 HERE

Figure 7 HERE

5 Discussion

Our results point out, quite unsurprisingly, that the visual strategies of political leaders have been influenced by the pandemic. The interesting fact here is *how* they have been influenced. Specifically, we showed that consistently with our Visual Opportunity Structure (VOS) argument, politicians and spin doctors across Europe seem to have adapted their visual communication strategies to align with a dramatically changed situation: the pre-pandemic/pandemic difference in the employment of inappropriate visual features is quite strong, with big (between 12 and 15 points in predicted probabilities overall) differences in the employment of positive emotionalization and group archetype. These results are consistent with the intuition that leaders are careful about the visual representation of their communication and, especially, they estimate which type of visual communication is likely to be rewarding among their audience.

In this respect, the wave-like trend of the pandemic represents a unique opportunity to test whether the expansion/reduction of the structure of opportunities to communicate specific visual features leads to a significant change in the strategies employed by the leaders. The employment of the positive emotionalization and group archetype mirrors the trends of the pandemic waves: during periods of heightened pandemic impact, characterized by an increased number of reported COVID-19 deaths, the opportunity structure for portraying smiles and groups significantly diminishes across the three waves analyzed (March 2020 to December 2021). Conversely, the employment of these same features increases in the moments in which the pandemic softens (mainly during summer). Also, if we look at the pre-pandemic period, we see that those features are roughly stable during the whole year before the COVID-19 outbreak (which comforts us that the trend is hardly due to a seasonality effect).

Our analysis also provides some evidence of the intentional nature of the visual strategies organized by politicians during the COVID-19 pandemic. Consistent with our argument, if some elements of strategic reasoning are employed in the visual choices that politicians make, leaders of parties in government will be more careful than the opposition in portraying positive emotionalization during the pandemic, especially during its most dramatic period (namely, during the waves). If this did not happen, an alternative explanation would have been that, as COVID hits hard, politicians just avoid big gatherings and do not portray clear signs of positive emotionalization (limiting their communication to different information). In the results, we show that the government/opposition difference holds when it comes to positive emotionalization but does not apply to the group archetype, which sees all leaders drop their employment of the feature similarly. This outcome is likely attributable to the distinct connotations associated with the two features: positive emotionalization is connected to inappropriateness during a pandemic (as it is deemed inappropriate to portray oneself smiling during a pandemic wave), while the use of the group archetype, in specific

moments and countries, may even imply illegal activities (such as unauthorized gatherings). Consequently, the crowd archetype might be seen as a feature containing an additional cost if published. The result is also consistent with the stronger negative effects on the probability of the employment of group features in pictures, compared to positive emotionalization, when the pandemic breaks out[13].

6   Conclusions

This contribution's main aims have been to theoretically posit some basic concepts that we argued might explain politicians' choices in their visual representation online. We relied on a well-established strand of literature, the one dealing with the relationship between the (cultural, political, and social) environment and the choices that political actors make to communicate to their constituencies and to society in general, the Political and Discursive Opportunity Structure (POS/DOS) arguments (Koopmans and Olzak, 2004). Those theories posit that specific political arguments made by specific political actors are bounded by the opportunity structure that is dominant in a specific society. Political actors, in other words, try to fit into these boundaries, under penalty of making their message less appealing, or even counter-productive.

The VOS argument stretches previous POS and DOS arguments, arguing that we can analytically define a separate level of communication that is becoming increasingly important for politicians: the visual one. Our argument starts from the standpoint that visual choices are crucial in the communication process of party leaders and that they are careful in choosing specific visual elements that are deemed appropriate by their audience. Specifically, the

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[13] Regarding the intentionality issue, we have produced additional analyses that see as a dependent variable the portrayal of surgical masks. The strategic nature of VOS is additionally demonstrated showing that right-wing politicians' strategies are significantly less inclined to show surgical masks in their images, consistent with the literature. Details are available in SM8.

combination of the VOS argument and the empirical evidence brought in this paper suggests three main interesting conclusions. First, consistently with the VOS argument, we notice that visual communication adjustments can be *very quick* as the societal/cultural opportunity structures change. In this specific case, politicians and their communication staff have been able to omit specific visual features in real-time, according to the expected modifications in the structure of opportunities. Second, there are specific visual features that are seen by politicians as crucial: our results suggest that the need to be perceived as pleasant and surrounded by the people is so important for political leaders that the features are re-introduced (at almost pre-pandemic levels) as soon as the leaders evaluate that the structure of opportunities allows it, even in a situation that it is not completely safe (e.g. the summer of 2020 and 2021). This confirms what is argued by Schills (2012), namely, that a hierarchy of importance of visual features exists and that some visual features are seen by political leaders and communicators as "non-negotiable". Third, we show that the positions in the political arena (government/opposition) are relevant in shaping the communication strategies of politicians, with government leaders more influenced by the opportunity structure than opposition ones.

The paper presents several limitations that should be considered in future research. The main theoretical issue is that the VOS argument has been applied to the case in which the sudden change of the opportunity structure was evident: after a few days/weeks from the beginning of the pandemic, it became limpid that the emergency would have led to a dramatic change in the European social and political landscape. This change had, not surprisingly, strong consequences on leaders' political communication, both at the discursive level and, as we have shown, at the visual one. The pandemic thus represents a notable case in which VOS-based strategies can be easily unveiled. However, what happens in situations in which the change in the opportunity structure is less clear/drastic? Our case study can only account for a rather

small subset of all the changes that might occur at the opportunity structure level and is not able to produce testable predictions for less dramatic situations.

An additional theoretical limitation of the paper is that it lacks a compelling mechanism that underlies the choice of politicians to employ the VOS-consistent reasoning: is the change of visual features performed autonomously by politicians and their staff or, rather, there is a push by an external actor (the politicians' audience) to change visually their communication? To date, and given the limitation of the Instagram API (which does not allow scraping the most evident features of the audience's reactions to political communication online, comments, see Anonymous, 2020), we cannot provide a clear answer to this question[14]. We believe further research should employ expert surveys or interviews of political actors and their communication staff to explore the awareness regarding the opportunity structures in which their visual communication is embedded, where this awareness comes from, and the intentionality regarding their visual communication choices in specific contexts.

From the empirical point of view, we must also acknowledge that the data we collected are rather under-used in the paper: they do not exploit completely the comparative nature of European visual political communication, by, for instance, investigating whether national socio-political variables can alter the effects presented in the paper. This represents an obvious choice, given the focus that we applied to present the VOS argument at the expense of more refined empirical evidence. Moreover, we need to stress that the algorithms employed do not allow us to reliably recognize whether the people depicted in the images analyzed are indeed politicians or other subjects, such as ordinary people.

Finally, we do not investigate explicitly the relationship between the VOS and the DOS theories – in other words, we do not analyze the text information that is usually available,

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[14] An attempt to partially answer this crucial theoretical question is presented in SM6.

together with pictures, in Instagram posts. Future research should focus on investigating this

latter aspect.

7 References

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8   Figures

Figure 1. Left: Nicola Zingaretti drinking with friends in Milan, on Feb 27th, 2020 (La Repubblica, 2020). Center: the picture in a Tennessee representative's Instagram feed (Gaudiano, 2023). Right: George W. Bush's "huge mistake"(Wing, 2011).

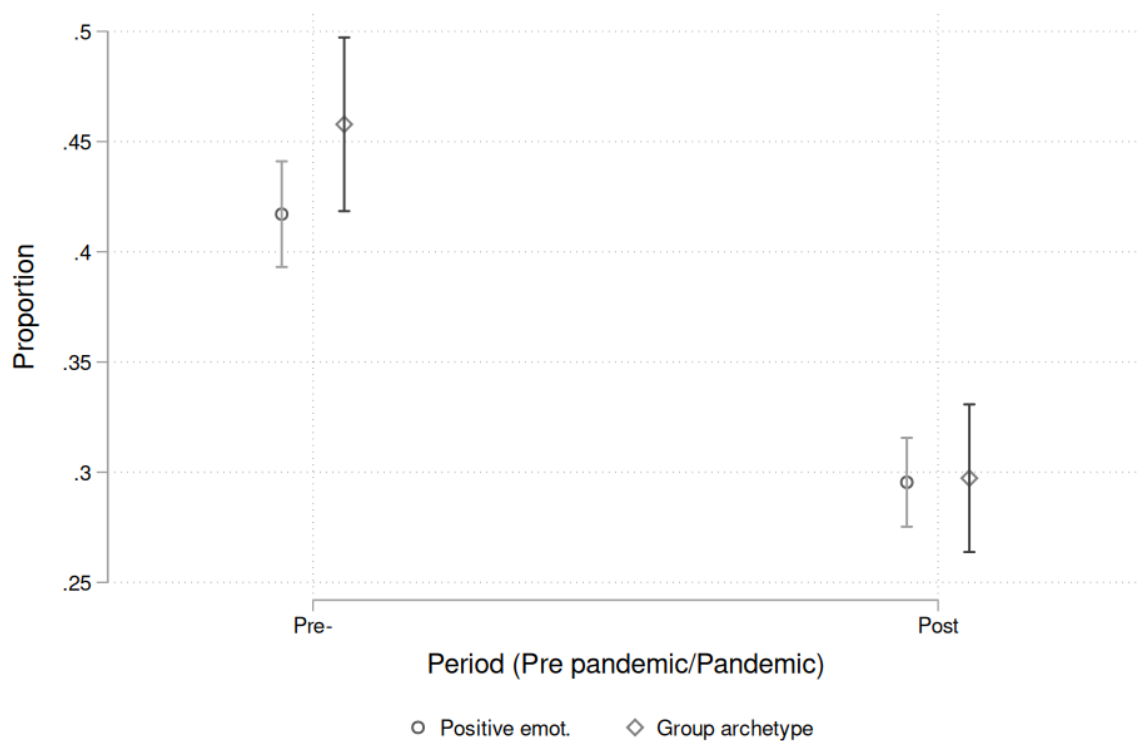*Figure 2. Predicted probabilities of presenting positive emotionalization/group archetype (pre-pandemic/pandemic)*

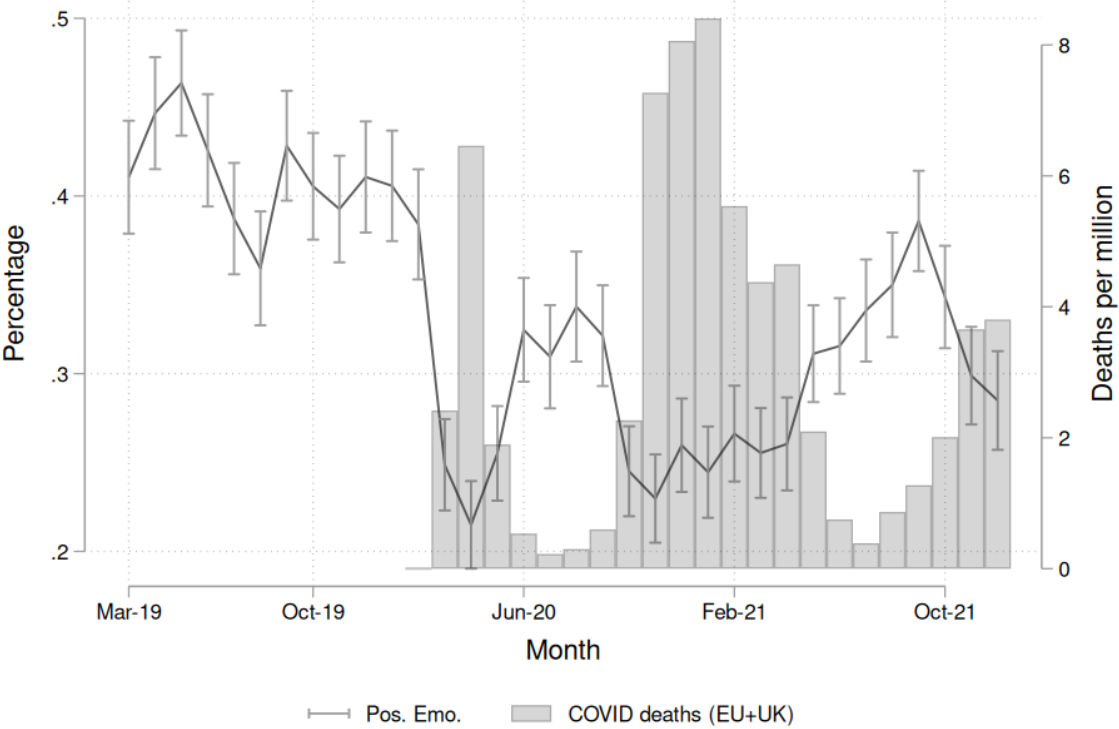*Figure 3. Predicted probabilities of presenting positive emotionalization (monthly)*

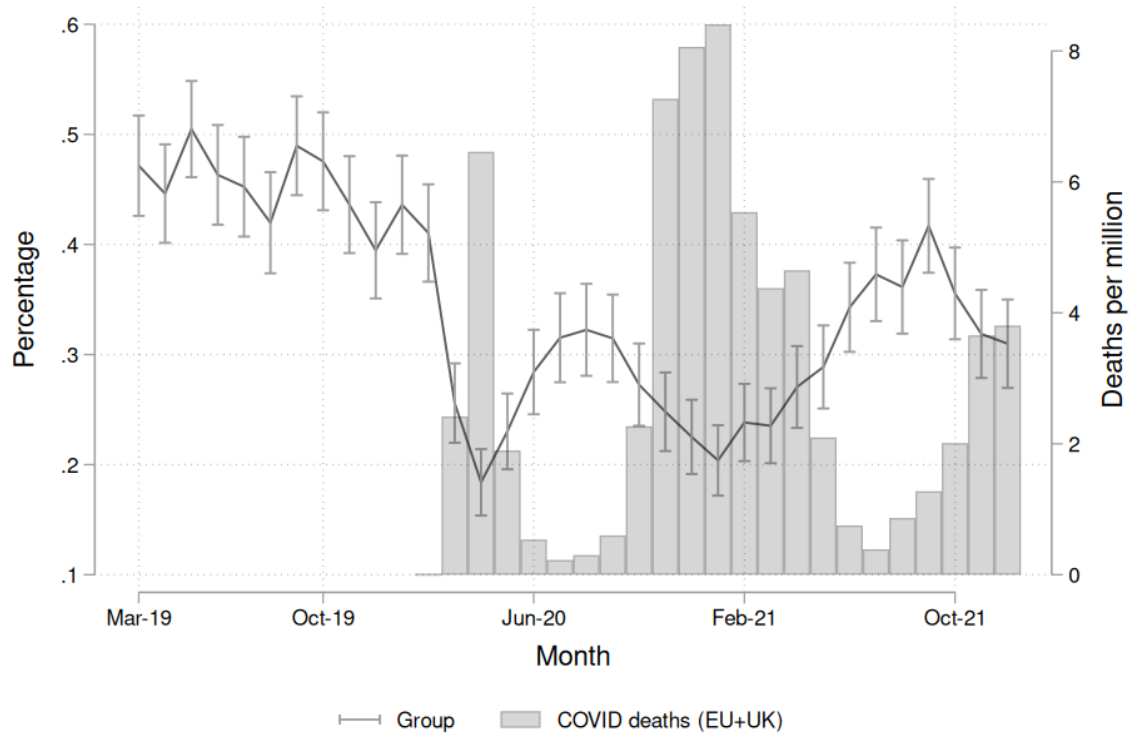*Figure 4. Predicted probabilities of presenting group archetype (monthly)*

Figure 5. Predicted probabilities of presenting positive emotionalization (left panel) and group archetype (right panel) by government and opposition (pre-pandemic/pandemic)
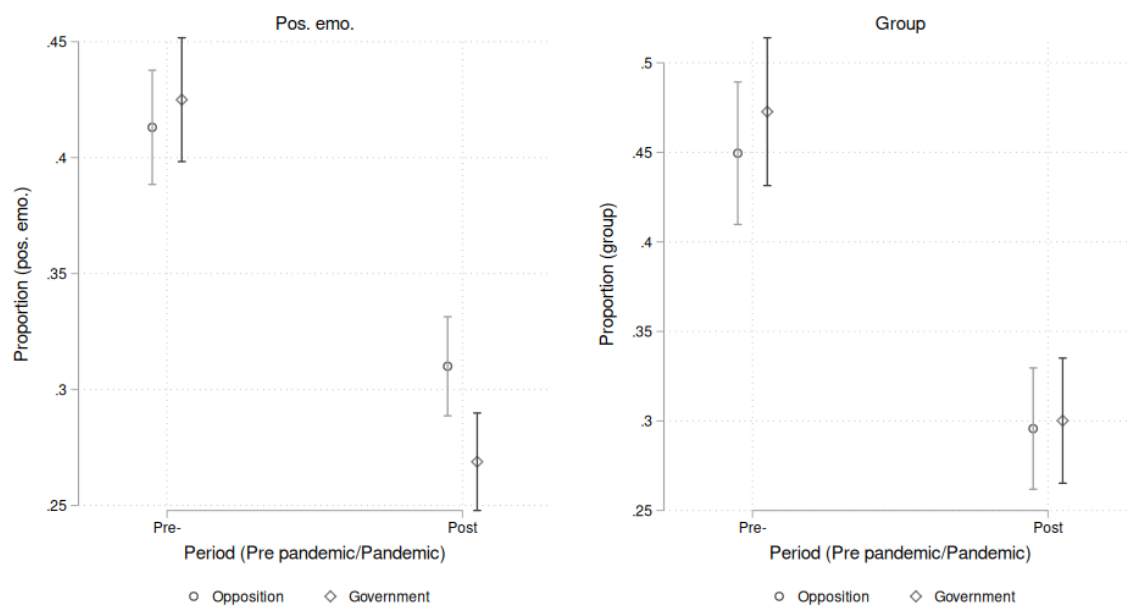
Figure 6. Predicted probabilities of presenting positive emotionalization by government/opposition (monthly)
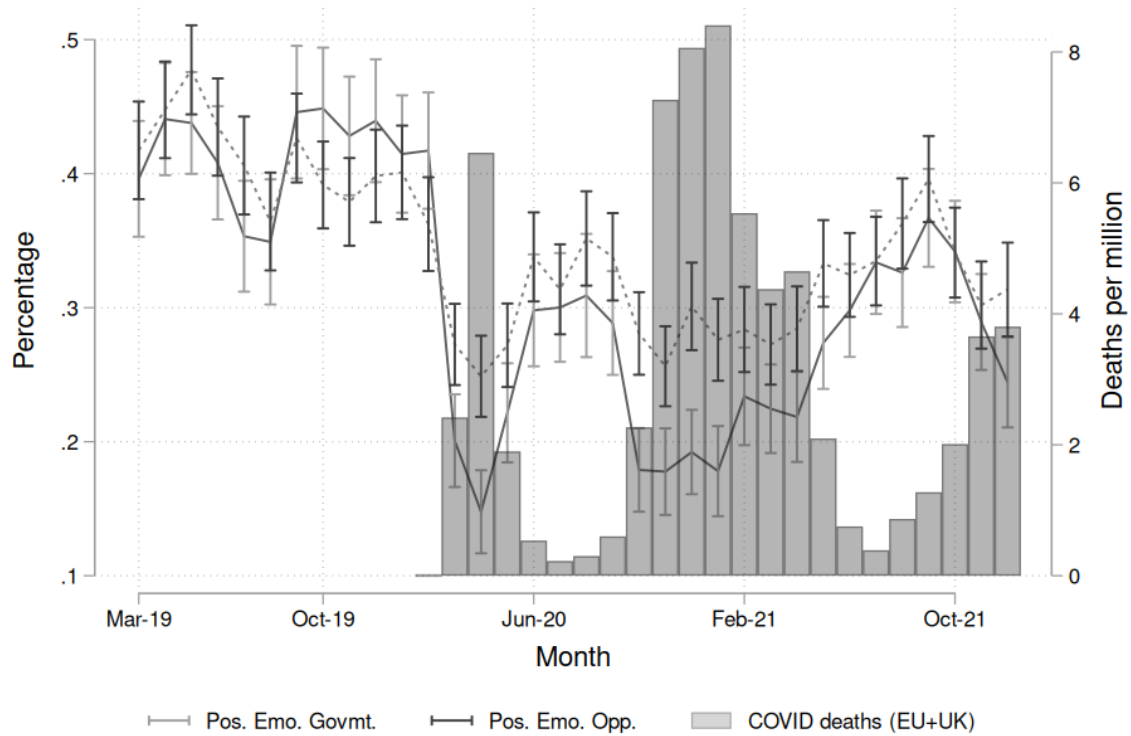

Figure 7. Predicted probabilities of presenting group archetype by government/opposition (monthly)