

# Divisive *Politics* for erratic *Policy*:

The effects of party polarization on government response  
to Covid-19 in EU countries



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# Abstract

Party polarization research at the academic level has been limited so far compared to media coverage. Nonetheless, there is increasing academic attention on the effects of polarization on policy intensity. This study aims to analyse the impact party polarization has on the government response carried out in the EU countries during Covid-19. The specialized literature study how political polarization affects governance, and when high levels of political polarization arise, the chances of generating legislative and executive gridlock increase. However, a lack of studies links the government response to Covid-19 with polarization at the elite level. To do so, this paper intends to capture the impact of party polarization on government response during the external shock of the pandemic. Consequently, a panel data quantitative study is conducted in the theoretical framework of rational choice covering 26 EU countries for 2020 and 2021. Finally, results suggest that exacerbated polarized political systems presumably adopts lower government responses to tackle Covid-19.

Keywords: Party polarization, government response, Covid-19, EU, rational choice, panel data

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# 1. Introduction

Why are some governments stricter in their response to Covid-19 than others? Is this linked to party polarization? Party polarization and its potential effects are considered a topic of interest in different media platforms; however, its scholar attention and contribution have been limited to date (Charron et al., 2020). The prominent literature divides polarization into two strands. First, it distinguishes between political polarization, which occurs at the elite party level, and affective polarization, representing social mistrust by those sympathetic to the opposing party. However, the studies covering both types of polarization show a clear twofold trend. On the one hand, the United States has shown up as the prevalent region of polarization studies due to its political composition (a two-party system) and increasing polarization. On the other hand, the literature denotes a particular focus on mass or affective polarization. The study of social polarization has been growing considerably, and its results show compelling insights. However, this proves a lack of studies focusing on other countries than the United States, framed in the scope of political polarization.

Despite this, a growing literature seeks to help analyse the more negative consequences of polarization at the political level. Polarization can affect society in multiple ways, but particularly in moments of crises, like the one caused by the pandemic, polarization is studied correlated with government efficiency or excess of death, but not with the extent of the governments' response to face the Covid-19 pandemic. In addition, it is theorised that in a highly polarized environment, the government may prioritise the short-term interests of core voters rather than long-term social interests (Charron et al., 2020). Following this logic, governments will not be able to take unpopular and short-term policy decisions in a highly polarized environment, regardless of its effectiveness.

To fill this gap in the literature and elaborate a more profound understanding on this topic, this study aims to analyse the consequences of elite polarization on government action in EU countries to curb Covid-19. To this end, the following research question is formulated: To what extent has party polarization shaped EU member states responses to the Covid-19? The research question's



relevance is to explain why some governments were more severe in the response than others and whether this response has been led by elite party polarization. Hence, the motivation behind this essay is to discover the effect of party polarization and its potential impact on the reaction by governments when handling Covid-19. The present study is not centred on the government quality response per se, or further, on the degree to which these measures are successful or not. Instead, it is determined by understanding driving forces in why some governments have been stricter than others. To this end, it is proposed a hypothesis exploring the negative relationship between the two variables. Finding out or getting closer to discovering the nature of these strategies is convenient to advance government accountability and transparency.

This research project is also trying to go beyond the predominance of the study of polarization at the qualitative level. To this end, this paper explores through a quantitative panel data the impact of party polarization on government response for the period 2020-2021. Using an original dataset of 26 EU countries, this analysis provides a deeper study of the evolution and impact of the studied variables. The variable measuring the extent of government response is obtained thanks to a database that daily updates the level of government responses through a holistic quantification based on different government fields of action. On the other hand, political polarization is obtained at the party level, and the variable is constructed at the government level. It is also homogenised, thanks to the Dalton formula used exclusively to generate an index of political polarization.

Although it may be challenging to fully explain the motivation for variation in the government response, findings establish preliminary evidence that higher rates of political polarization impact shrinking the extent of the government response to tackle Covid-19. For instance, a 0.1 unit increase (in a 0-1 scale) in the polarization level leads to a decrease by 24.49 points in the government response on a 0 to 100 scale. These results support the idea in the literature that, potentially, exacerbated levels of polarization contribute to higher levels of legislative and executive gridlock (Binder, 2015; Myers, 2020). Moreover, it does so with an intersection in which this response occurs in the midst of a pandemic, contributing to expanding a growing literature on the study of polarization effects in times of Covid-19 (Charron et al., 2020).

Moreover, this study establishes a path for further research in different aspects. Since this is a very recent subject of study, the lack of data is considered. Therefore, when more data is available, it would be interesting if this study could be carried out at the regional (rather than national) and party (rather than government) levels. However, to perform these studies, one has to be conscious that they are very context-specific. Linked to this, the more time passes, the better the theoretical evidence and the more data we will be able to explain more comprehensively these context-specific factors that impact the variability of government response. Simultaneously, methodologically, it would be interesting to see a contribution to a process of refinement in the quantification of the polarization variable that can be able to capture in a broader and more permeable way the different aspects that impact its composition.

The rest of the paper proceeds as follows: In Section 2, the literature review is included to analyse the empirical evidence regarding the consequences of exacerbated political polarization in different branches. In Section 3, the theoretical framework is presented, and the central hypothesis is described. Section 4 covers the methodological part, where data, the method to be applied, and the study's limitations are comprised. Furthermore, the analysis and findings are presented in Section 5. Section 6 explores a discussion of the results and their relevance. Finally, section 7 incorporates some concluding remarks.

## **2. Literature Review**

The present study aims to analyse the effects of partisan polarization on governance in times of Covid-19. Consequently, this section attempts to present a literature review that gathers these three fields (Polarization, governance and Covid-19) and the academic interactions between them. Therefore, I present how the literature interacts with looking at the effects of polarization on different aspects, mainly on governance and democracy. Besides, more concretely, I describe governance and polarization in Covid-19 times, looking in particular at the effects of polarization during Covid-19. Finally, a gap in the literature is introduced.

### **2.1 State of the art**

The present literature addressing polarization, governance and Covid-19 confronts two main clear focuses of study. First, regionally, polarization is mainly spotted in the research in the United States, as its biparty system combined with recent increasing polarization both in the elite and social levels, makes it more intuitive and favoured to study (Lee, 2013). In comparison, there is a systemic lack of this same study in Europe (as few exceptions Charron et al., 2020; Casal Bértoa and Rama, 2021). Previous studies on party polarization in Europe have been limited in number and depth.

Secondly, a similar cleavage in the literature can be found when reaching the intensity of the research between elite or attitudinal and social or affective polarization. In the latter, it has been primarily studied across the literature (Kerr et al., 2021; Jungkunz, 2021; Iyengar et al., 2018; Druckman et al., 2020; Druckman & Levy, 2021; Gollwitzer et al., 2020; Allcott et al., 2020) through different qualitative methods, and again, more particularly in the United States. In contrast, the study of elite polarization is under-researched and suffers a lack of a quantitative approach. In comparison, few studies (Charron et al., 2020; Casal Bértoa and Rama, 2021) fulfil and combine EU-based research, quantitative techniques and the analysis of elite polarization in times of Covid-19.

### **2.1.1 Covid-19 context**

In December 2019, a series of cases identified as unknown pneumonia was reported in Wuhan, located in Hubei province, China. This cluster of infections began to spread globally, leading the head of the World Health Organization (WHO), Tedros Adhanom, to declare a pandemic on 11 March 2020 of a virus called SARS-CoV-2 (World Health Organization, 2020). The rapid increase of infections and thus hospitalizations strained the various health systems throughout Europe. In addition, Covid-19 was shown to have a high severity of respiratory distress, increasing the demand for respiratory support devices such as ventilators. These ventilators became a scarce commodity in hospitals, thus creating a situation of high health care stress (Ehni et al., 2020).

As this paper deals with the governmental response of EU countries to Covid-19, it is relevant in this case to contextualize the initial responses to this early pandemic by different countries. To curb Covid-19 infection and deaths, a variety of measures were imposed in the short term. School closures, mobility limitation in the form of quarantines, cancellation of public events, or closure of public transport were among the most common (Hale, Angrist, Cameron-Blake, et al., 2020). Nonetheless, the approaches and intensity in the response were not homogeneous across Europe. In most of the countries, high restrictive measures were adopted, but some EU countries, such as Sweden or Netherlands, adopted a complete lax strategy to contain the pandemic (Petridou, 2020).

These countries have varied in their strictness in responding to the pandemic depending on the health situation. This pandemic has occurred in waves (peaks of severity) that have impacted at heterogeneous times across Europe. In addition, variants of the classical Coronavirus have emerged, characterising the different pandemic waves. In addition, in order to curb both the contagion and the level of mortality of Covid-19, the scientific community has been able to come up with several vaccines aimed at reducing these risks. The European Commission has been responsible for managing the joint purchase of these vaccines for the European population. In this framework, the vaccination campaign in Europe started in December 2020. When writing the present study, the pandemic is undergoing the sixth wave, characterised by the variant known as Omicron, preliminary known by its high contagiousness and low lethality (Sheikh et al., 2021). According to the European Centre for Disease Prevention and Control (ECDC), 1 603 511 people

have died in Europe since 31 December 2019 and as of 22nd December 2021 (European Centre for Disease Prevention and Control, 2021).

## **2.2 What is polarization?**

The Pew Research Center has described polarization as the “defining feature of 21<sup>st</sup>-century American politics, both among the public and electoral officials” (Doherty, 2014). Party polarization and its potential effects are considered a topic of interest in different media platforms; however, its scholar attention and contribution have been limited to date (Charron et al., 2020). Therefore, before analysing the effects of party polarization, it is relevant to define and categorize it. Further, the specialized literature presents two main types of partisan polarization, “affective polarization” and “ideological polarization”. According to Iyengar and other researchers (2018), the former represents the idea of societal partisan mistrust from the opposing party. The latter is referred to as elite partisan divisions on policy aspects (Charron et al., 2020). Moreover, elite polarization reflects the degree of ideological differentiation among political parties in a system (Dalton, 2008). In the case of the present study and due to its characteristics, the focus is on “ideological polarization” as the investigation is centred on the analysis elite (parties) take, rather than polarized societal affection.

### **2.2.1 Interactions between the elite and the mass**

A branch of literature is of particular interest to mention in this case. It is the interplay between attitudinal or political polarization and mass polarization. More specifically, it is about the effect of political parties' polarization on society. Importantly, Druckman and other researchers (2013) and Skytte (2021) find evidence that polarized environments fundamentally change how citizens make decisions and take a stand on different policy areas, generating affective polarization. Alike, Gollwitzer and other researchers (2020), using GPS smartphone location data, show how the positions taken on Covid-19 by the two main parties in the United States (Democrat and Republican), more specifically on the limitation of mobility and the use of masks, affected the behaviour of citizens, behaving in a partisan manner. Going further, this partisan inconsistency in social distancing was found to have higher disease transmission and economic costs (Gollwitzer

et al., 2020; Allcott et al., 2020). At the same time, Green and other researchers (2020) discovered that elite rhetoric polarization hinders effective responses to public health crises. Compared with a case in which accurate information and rapid behavioural change were predominant, the efficacy in the response for the former was lower. This argumentation is consistent with the fact that political leaders can heavily shape social behaviours and ensure increased compliance with preventive policies during a public health crisis (Grossman et al., 2020). Thus, to date, there is suggestive evidence indicating how parties and politicians handle the response to the Covid-19 pandemic also impacts the polarization of public opinion (Bavel et al., 2020).

### **2.3 Polarization and Governance**

In the literature covering the effects of polarization on governance, its varied nature stands out. The academic debate ranges from the impact of polarization on economic inequality, climate change, ineffective financial regulation or immigration reform (Jesuit et al., 2018). As previously mentioned, in this case, most of the literature focuses on the effect's polarization has on governance in the United States. However, its inclusion is relevant as it may have strong extrapolation effects on Europe. Thus, the present literature review focuses on party elite polarization's impact on governance and outcomes.

There is a growing literature on the effects of polarization on policy intensity. According to Charron and other researchers (2020), if political parties are significantly distant from each other, governments' opposition will refrain from supporting the ruling party for taking the necessary measures. Therefore, to take extraordinary policies, governments must find a way to build remarkable consensus with the other pertinent political actors (Charron et al., 2020). Moreover, in a highly polarized environment, the government may give priority to the short-term interests of core voters rather than long-term social interests (Charron et al., 2020). Further, as Cairney (2016) finds out, governments in a relatively low-polarized party system may easily justify high-risk decisions claiming that they are based on public interests rather than special ones. However, government parties in a highly polarized framework may prefer to assure the core support instead of finding a broad consensus that might not be legitimized by a fraction of the society (Cairney, 2016). Following this logic, governments will not be able to take unpopular and short-term policy

decisions in a highly polarized environment, despite being more effective in the long term (Charron et al., 2020). In this case, the latter theoretical evidence is very relevant since the study carried out by Charon and other researchers (2020) has Covid-19 as its study target, thus assimilating to what is covered by the present study.

In addition, the most widely shared idea, and perhaps the one on which there is most consensus in the literature, is the capacity of elite polarization to generate legislative gridlock. As expressed by Jesuit and other researchers (2018), partisan polarization creates an environment in which rigid partisan views on major policy issues are held to be less susceptible to negotiation, compromise or change, given the available information. Accordingly, polarization threatens the capacity of political systems to resolve policy dilemmas. Besides, as Barber and McCarty (2013) pointed out, focusing on the United States, when increased policy differences, there is a shrink in the overall commitments that both parties can accept. Polarization and low dimensionality thus contribute to more significant blockage and less policy innovation during terms of divided government. Moreover, institutionally, Binder (2015) discovers how political polarization on US Congress generated legislative gridlock in major issues such as homeland security, climate or immigration. This gridlock simultaneously has developed a sense of lack of legislative productivity on the US Congress, hampering its legislative capacity (Lee, 2015).

Moreover, Myers (2020) studies how the US Affordable Care Act (ACA) programme is a suiting case to show how partisan polarization and conflict can hinder the federal government's legislative action when facing pressing policy issues and budgetary concerns. Leaving the focus of the US Congress, Lee (2015) also studies the effect of elite polarization on US presidential leadership and judicial processes. As it is argued, a divided government context would hamper presidential executive tasks, freezing its reorienting and agency capacities (McCarty & Razaghian, 1999). As previously mentioned, political polarization has also affected the US judicial process. As examined, party polarization plays a negative role on US Supreme Court, endangering its institutional legitimacy, judicial independence and lifetime appointment (Lee, 2015).

Although there is little academic research on it, some scholars have studied the effects of this gridlock situation on some policy areas. For instance, McCarty and other researchers (2005) and

Hacker and Pierson (2010) agree that this gridlock on governance has a conservative influence on social and economic policy. Consequently, they find out how party polarization, represented as legislative gridlock, is related to rising economic inequality. In short, with a growing polarization context, governments choices obey a more identity-based and tribalist guidelines instead of rational and value-based standards (Somer, 2018). Scholars also analyse the effects of polarization on institutional trust. As polarization increases, Americans perceive Congress to be less productive, losing faith in its capacity to legislate effectively (Jones, 2015) and generating a lack of citizen trust in government (King, 1997; Hetherington, 2007).

Likewise, further evidence expands this, analysing how distrust in US Congress caused by partisan polarization generated a reduction in compliance with the law (Jones, 2015). The literature also studies the effects of polarization on government negotiations. For instance, it is examined that due to high levels of polarization, negotiation failures are easier to occur, leading to undermining governance, generating lower-quality legislation, and harming the executive and judicial functioning in the United States (Barber & McCarty, 2013). Additionally, Sørensen (2014), through a panel data analysis on Norwegian local governments, finds evidence that party polarization and partisan domination cause lower government performance, especially in situations where government revenues are high. Thus, following the literature, polarization vastly complicates modern governance (Jesuit et al., 2018).

## **2.4 Polarization & democracy**

This literature studies in some depth the role that political polarization plays in promoting or damaging the democratic system. In this area, the literature presents a mixture of contradictory opinions. However, the prevailing academic view is that elite polarization certainly harms democratic functioning. On the one hand, it is theorised how high levels of party polarization can, to a certain extent, produce higher levels of democracy. On the other hand, several scholars argue how polarized party systems can provide voters and citizens, in general, with clear information about the policy positions of the different parties. Then, voters can ascertain which parties are closer to their political position (Wang, 2012; Campbell, 2016; Singer et al., 2015).



Nonetheless, on the other hand, for instance, Lee (2003) shows how rising party polarization has acted as the most formal severe obstacle to South Korean democracy. Party polarization consequences were a higher political gridlock and the promotion of confrontational politics in South Korea, making complex consensus-based policies and reaching compromises. Moreover, not only a political gridlock, but old and new elite collapse caused by high levels of polarization can also work as adverse outcomes for democracy (McCoy et al., 2018). In addition, filling to this, severe polarization leads to higher ideological debates, weakening the legitimacy of the system and generating a destabilization and vulnerability effect in the democratic pillars (Dalton, 2008; Mccoy, 2019). Besides, interestingly for the present study, as it departs from the dominant framework of study, the US, Casal Bértoa and Rama (2021), using the EU countries, find that the higher the levels of polarization, the lower the levels of democracy. Contributing to this, party polarization appears as a negative factor to people's satisfaction with democracy (Hoerner & Hobolt, 2019). Lastly, there is a growing literature on the effect's polarization has on the voter's democratic standards. For example, and more mass-politics oriented, high levels of polarization repercuss on diminishing levels of citizens willingness to tolerate undemocratic behaviours (Graham & Svolik, 2019). Similarly, voters are willing to trade off democratic principles for partisan interests, eroding societal resistance to authoritarianism (Svolik, 2019).

Again, a certain contradiction appears when the literature covers the effects of polarization on democratic turnout. For example, while some studies have found how increased polarization leads to higher turnout rates due to higher stakes elections (Adams et al. 2006; Franklin, 2004), others have argued that it leads to lower levels of voter turnout due to centrist voter disaffiliation (Hetherington 2008; Rodon, 2017). Furthermore, regarding democratic accountability, in the context of Turkish politics, polarization is studied as a cause for aversion to horizontal accountability, understood as the checks and balances a political system sustains (Somer, 2018). Furthermore, using Thailand and the Philippines, Slater and Arugay (2018) exemplify how political elites used pernicious polarization to stretch constitutional boundaries and diminish horizontal accountability. The more effective the polarising policy became, the more it took control over politics, increasing the chances for weakened democracies to prevail.

## **2.5 Governance and polarization in times of Covid-19**

Governance seems to have regained some value with the Covid-19 shock. Governments are being tested in their battle over the rapid and broad spread of COVID-19. Countries decided to impose divergent strategic approaches to face Covid-19, either a soft-passive approach based on herd immunity or a more hard-forceful one, characterised by stringent lockdowns (Moon, 2020). Governance has been perceived as a key element in tackling and resolving the pandemic (Grossman et al., 2020; Martínez-Córdoba et al., 2021). As Taghrir and other researchers (2020) recall, the impact of the public policy-making governance on health systems and the fight against a pandemic become evident to all stakeholders and the public in such emergency contexts. Thus, one of the leading academic findings covering governance and Covid-19 is the importance of an early and flexible response to contain the virus and minimise the Covid-19 health impact, punishing governments that are late (Plümper & Neumayer, 2020). Martínez-Córdoba and other researchers (2021) have further analysed how greater citizen participation, communication or freedom of media and expression were key elements for good governance, while, for instance, poor compliance to the rule of law hampers the efficient management of the pandemic.

The literature also gives particular importance to the impact of polarization in Covid-19 governance management. Applied to a more geographic practical case, for instance, in the Spanish case, Royo (2020) studies how polarization and lack of cooperation between the government and the main opposition party made the response to the crisis more difficult to manage. Although the present study does not focus on the degree of effectiveness of the response to Covid-19, other studies focused on the United States support that high levels of income inequality and political polarization have hindered its response's efficacy to Covid-19 (Makridis & Rothwell, 2020). Associated with this reasoning, Freira and other researchers (2020) have developed a study comparing highly elite polarized (The United States and Brazil) countries, and low-medium elite polarized (Uruguay and Argentina), concluding that in the first group (Brazil and United States) ineffective responses are associated with lower consensus with the Covid-19 policies. However, in the second group (Argentina and Uruguay), higher support to the party in government correlated with a higher agreement with Covid-19 policies (Freira et al., 2020). Likewise, in the context of previous diseases, Myers (2020) studied the differences in party votes and recent disease

outbreaks, finding out how partisan polarization created delays and reduced funding, contributing to unnecessary deaths and suffering. More concretely, recent studies cover already the effects of polarization on vaccines. Interestingly, Ebeling and other researchers (2021) find out how the polarized political bias impacts the anti-vaccination behaviour in Brazil.

Another important finding related to governance in times of Covid-19 is that previous experience seems to be key for an effective government response. Common features in East Asian countries such as strong government control, democracy, transparency and clear roles played a fundamental role to contain the virus (Shaw et al., 2020). In this same paper, the authors explore how the double-loop learning process provided by SARS respiratory syndrome in 2003, the influenza A (H1N1) in 2009 and the MERS exposure in 2015 were vital experiences in order to activate governance architecture and protocols that were already adapted to the pandemic response. For example, according to Park & Chung (2020), South Koreans' previous pandemics experience has shown to be a core explanation of its success. Besides, applying the Taiwan case, a mixture of well-implemented measures to contain, trace and isolate potential origins of infection, together with a high level of public compliance, led Taiwan to have an exceptional "report card" in the global wave of COVID-19 (Huang, 2020). Lastly, as Chua and other researchers (2020) argue, the Singapore case, also a country with past pandemic experience, has been characterized by its health system resilience during outbreaks. Its resilience was closely linked to clear leadership, flexibility, timely and transparent communication, or access to crisis financing as it was developed.

### **2.5.1 Polarization & Covid-19**

Although there is little evidence due to the recent nature of the issue, some preliminary evidence points towards the direction that Covid-19 has acted as a catalyst for an increased polarization. According to Jungkunz (2021), the Covid-19 crisis has generated two clusters between higher educational jobs that can easily perform work from home, and those with lower in-person educational jobs, posing higher health risks, increasing social polarization. Furthermore, Covid-19 has increased the polarization in elite rhetoric, hindering effective responses to public health crises (Green et al., 2020). In addition, during COVID-19, there has been an increased party-level division over how to respond to the COVID-19 pandemic, growing social divisions. As citizens

conceive high political polarization, they are more prone to develop stronger opposing stances towards supporters of other parties (Jungkunz, 2021). Nonetheless, and as ratified by Grossman and other researchers (2020), there is little evidence about the effects of Covid-19 in the polarization at the elite level, compared to its same study on social or mass polarization.

## **2.6 A gap in the literature**

All this being said, a gap in the literature can be found in different aspects. Firstly, in the specialized evidence, polarization is correlated with efficiency or excess of death, but not with the extent of the response (stringency) the governments gave during Covid-19. Therefore, this study attempts to cover this space in which government response to Covid-19 is conceived as an interesting experience that denotes the agility, speed and solvency with which it demonstrates the intrinsic characteristic of governance in the different EU countries.

Secondly, and taking up what has already been expressed in the state of the art, the polarization studied at the academic level presents a double cleavage. On the one hand, there is a geographical focus of study practically monopolised by the United States. Its bipartisan characteristics, the interest in US domestic politics, and its growing polarization mean that most studies have this geographical focus. But, on the other hand, the literature reveals an imbalance between the study of elite or political polarization and social or affective polarization. As shown above, social polarization presents a more extensive and exhaustive depth of academic research. Therefore, the present study attempts to fill the gaps in the literature on these two issues. Thus, it focuses on a geographical region that is under-studied both in number and depth (except for recent and exceptional studies Charron et al., 2020; Casal Bértoa and Rama, 2021) such as Europe, and it does so by studying polarization at the elite level, filling the other gap in the literature on the greater focus on mass polarization.

Finally, political polarization and government responses to Covid-19 are usually studied at a qualitative level in terms of methodology. Hence, the study of elite polarization is under-researched and suffers a lack of a quantitative approach. Except for the recent working paper study presented by Charron and other researchers (2020) including EU regions, there is a lack of studies

in the academic branch that contains a sizeable macro government study including different countries across time as aimed in the present paper. The prospects open when including an EU level (26 countries) are diverse and might be highly interesting for the scientific community.

### **3. Theoretical framework**

As argued by Wintrobe (1991), polarization is the product of a competitive political process. In the theoretical space, the hegemonic theory for spatial party competition is the well-known rational theory, considered as the dominant frame for formal analysis of candidates and parties in the strategic decisions (Van Houweling et al., 2005). As Hindmoor (2010) expressed, the rational choice approach, in the political science frame, implies the application of economics methods in politics. Although with nuances that are highlighted throughout the section, rational choice theory provides a broad explanation of the polarization caused by party competition and its more direct consequences. For this theory, actors (parties) are rational, defining rationality as a process of logical action, in which preferences are ranked and prioritise the best possible option in terms of costs and results (Downs, 1957). As rational actors, parties consciously follow vote-maximizing strategies (e.g., Adams, 2012; Adams et al., 2004; Budge, 1994; Budge et al., 2012; Laver & Sergenti, 2012, Dalton and Ian McAllister, 2014). Although the established theoretical framework is more than half a decade old, the fundamental logics, concepts and foundations remain hegemonic and of tremendous utility in explaining political competition and its ideologization.

The present study will use the framework devised by Hotelling, Downs and Sartori, and it will be nuanced and moulded to the interests of the present study. In order to systematise the academic thinking and clarify the direction of this theoretical framework, this section is divided into four parts. Firstly, it is provided a general description of the theory, its primary theorists and its refinement over time. Secondly, how the theory has advanced and is related to the topic is discussed. Thirdly, it is explained how this focus advances the present theory. Finally, the main hypothesis is included deriving from this and the previous section, which is going to be the one tested in the analysis section.

#### **3.1 The origins of spatial competition model**

Hotelling (1929), as a pioneer in the field of spatial politics, described the voters as a public that is evenly distributed along a linear market. As expressed by Benoit and Laver (2006), the spatial

politics field went through a process of constant development, and Downs (1957), years later, put an effort to lay the foundations for models of spatial politics and party competition. Based on Hotelling, the Downs perspective and its concept of the median voter explain how in a bipartisan unidimensional right-left axis, political parties adapt rationally to the median voter (see *Figure A.1* in the Appendix). However, in a multi-party system, this same scholar theorises that parties will be spread along the left-right continuum accentuating their ideological “product differentiation”, and, thus, expressing more centrifugal tendencies (See *Figure A.2* in the Appendix). Adding to the different political contexts of the years in which this theory was developed, the accumulation of knowledge and information means that it has to be combined with more recent academic evidence that qualifies Downs' postulates.

Following the spatial politics debate, Sartori (1976) theorizes powerful concepts to describe the dynamics in the party systems. As Miwa (2007) points out, Sartori's theory, although published several decades ago, it is still considered the most complete and well-grounded in explaining the party system in each country. Two possible systems can concur on multi-party systems: moderate pluralism (characterized by centripetal dynamics) and polarized pluralism (characterized by centrifugal dynamics). As Cox (1990) defines it, the centrifugal model is established when the incentives for political parties are situated towards extreme positions in the political continuum. Consequently, he defines centripetal dynamics as the dominance of incentives that pushes parties to compete towards centrists' positions in the right-left axis.

### **3.1.1 The Left-Right continuum**

The current paper uses the foundations laid by Downs in assuming the definition and positioning of political parties on a unidimensional continuum. Although the Right-Left continuum might be criticised for its simplism, it provides a reliable explanatory power in the party competition field (Adams and Merrill, 2000; Castles and Mair, 1984; Cox, 1990; Dalton, 2008; Huber, 1989; Inglehart, 1990; Knutsen, 1998; McDonald and Budge, 2005). The choice to measure and quantify political polarization under left-right terms will be discussed in the Data section in more depth. Downs introduces a model (median voter theorem) that explains party competition and its

centrifugal or centripetal tendencies. Thus, the left-right spatial model is conceived as a useful tool and the common framework for studying party systems.

### **3.2 Polarization and its effects**

Returning to the concepts put forward by Sartori (1976), in an increase of multi-party systems and in line with the needs of this study, polarized pluralism will be the central notion to be used throughout the section. In this fragment, it is considered important to provide with an answer on why centrifugal forces occur and their direct consequences. For instance, to address the former issue, Merrill III and James Adams (2000) explain that, when voters display partisan biases, the vote-maximiser incentives move to the extremes of the political continuum, generating a party shift from the centre, towards the extremes, expressed as the mean position of its partisans. This shift is explained by the fact that, rationally, this centrifugal move towards the average of its voters has a greater marginal benefit than the benefits of gravitating towards spaces where its rival's voters converge, trying to trap them. In this same logic, Xeferis and other researchers (2016) found out that centrifugal tendencies played a significant role in the 2012 French Presidential elections, as the parties vote-maximized more efficiently when moving to non-centrist positions. Furthermore, independently of the number of parties in a political system, some studies based on historical elections analyses how candidates had higher incentives in competing for non-centrist spaces (Adams, 2001; Adams and Merrill, 2000; Schofield et al., 1998).

To approach in answering why polarized pluralism occurs, Sartori (1976) address it presenting eight properties and conditions, highlighting the ideological distance between parties as a core factor to differentiate polarized pluralism from moderate pluralism (as seen in Appendix *Figure A.3*). Nonetheless, somewhat more recent studies try to complement the evidence established by Sartori and give meaning to why centrifugal forces occur in polarized pluralist systems. On the one hand, some internal or structural factors are used to explain the causes. For instance, Bale (2003) argues that the presence of populist radical right parties in the mainstream right has reinforced the turn towards bipolarized systems in Western Europe. On the other hand, external or contingent factors are addressed by Pelizzo and Babones (2007), as they find out that the levels of



party system polarization increase when economic conditions worsen, using some interwar European democracies as a case study.

But what is of utmost importance is to analyse how the theory faces the effects produced by polarized pluralism understood in the political competition framework. Wintrobe (1991) explained that in the case of polarization, centrifugal tendencies precisely represent the disintegrative flux of competition. Going back to Sartori (1982), he stands out that this type of system can be a source of instability and a condition generator for constitutional breakdowns. In this same area of constitutional breakdowns, Pelizzo and Babones (2007) establish that polarized pluralism was a determining factor in the collapse of interwar European democracies. Bogaards (2005), when analysing the Italian First Republic breakdown, he finds out that the combination of fragmentation and polarization in a centrifugal system were driving factors for the breakdown of democracy. Moreover, focused on Thailand political system, Slater and Arugay (2018) discovered how Thailand's pernicious polarization was a major cause for its 2006 democratic breakdown.

According to the literature, as a condition of polarization (Sartori, 1976), the increase of extremist parties has consequences on different governmental aspects. Before going into substance, Powell (1981) defines extremist parties as political groups that assure radical change in the political and social system. Multiple academics have explored and denounced the relationship between support for extremist parties and the risks to democratic systems (Powell, 1986). Firstly, there is relative evidence on the impact extremist parties have on cabinet formation. Under an extensive quantitative study, Taylor and Herman (1971) argue that by increasing the number of extremist parties, a vacuum is created in the central spectrum of the left-right axis, increasing the difficulty of government formation and thus its weakness. In addition, under this same argument, Powell (1982) claims that extremist party seats are negatively associated with the executive formation of coalitions. Secondly, the increased presence of radical parties affects the cabinet's durability. Both Powell (1982) and Dodd (1976) identify that party polarization, influenced by the expansion habitation of extremist parties, was linked to shortened cabinet durability.

Thirdly, the impact extreme parties have on government instability. For instance, Taylor and Herman (1971) found out that extremist party strength was powerfully linked to cabinet instability.

Besides, extremism, conceived as a promise of radical change in the economic, social and political landscape, is detected as a threat to democratic political stability (Powell, 1982). Moreover, more concrete support for extremist parties appears to be related to a higher government instability and the presence of turmoil (Powell 1981, 1986). Furthermore, Dodd argues (1976) that even though multiparty systems can be stable, using a general index of party polarization, the higher this index, the more shaken the executive stability will be. Likewise, in a study analyzing Indian political stability, Mitra (1980) discovered that an increase of both presence of antisystem parties and fractionalization of the legislature contributed to Indian governmental instability (Mitra, 1980).

Fourthly, extremist presence has also been studied as a cause of rioting presence. Hibbs (1973) found that Communist party membership was associated with citizen riots and demonstrations. Lastly, Powell (1981,1982) revealed that extremist party support, specifically endorsement for parties offering explicitly non-democratic ideologies or promoting a radical modification of the country's national community, was not only indicative of citizens' discontent, but the election rallies and protests that were organised regularly led to riots and civil unrest. Extremist support of this magnitude caused party-related or mixed riots to be three times more likely than in countries with a less extremist vote (Powell 1982).

Analysing further consequences, the literature suggests that the higher the levels of polarization of a political system, the higher the chances that each side of the spectrum will assist in the use of force to repress the claims of the opposite political parties. Under this argumentation, and as a consequence of this situation, countries with reinforced centrifugal competition have a higher chance of facing a dictatorship outcome (Wintrobe, 1991). Namely, the higher the levels of polarization a country sustain, the higher the likelihood of a dictatorship increase. Wintrobe (1991) also assumes that higher probabilities of dictatorship mean the escalation of political violence by the two factions, and thus, coming back to the first case, the breakdown of democracy. Besides, in the Venezuelan context, and as a consequence of polarization, the political system leads to a shutdown (the military's repression to the opposition), generating an increase of the political violence (Corrales, 2005).

### **3.3. Filling the gap**

When it comes to exploring the consequences of centrifugal systems with polarized pluralism under Sartori's theoretical framework, there is a substantial gap to be filled. In this case, the rational choice theory deals extensively with party competition and its causes. Sartori himself includes the conditions as mentioned earlier for centrifugal movements. But are they conditions or consequences? Much of the theory focuses on analysing why certain tendencies occur but surprisingly forgoes looking for evidence of these tendencies' implications, which aligns with the aim of this study.

Moreover, as shown above, most of the consequences focus on constitutional breakdowns, and governance but do not diversify much beyond that. Furthermore, it is a fact that most of the studies that use this framework and analyse the consequences of polarized pluralism for the constitutional breakdowns are used in the framework of inter-war democracies. What I mean by this is that there is no more up to date literature where this same issue is studied with more recent examples. This is precisely what this study fills in. It attempts to update and deepen the lack of research on the consequences of exacerbated political polarization in the field of party competition on a left-right axis.

Additionally, it is worth noting that all studies measuring the impact of "extremist" parties are based on an admittedly subjective and vague definition of what extremist parties are. In my case, the use of political polarization, a measure that is certainly more sophisticated and refined than the presence of extremist parties or fractionalization, with the exception of Dodd (1976), makes the present study more robust than the formers. Supporting the latter argument about the inaccuracy of using fractionalization as a measure, Dodd (1976) uses an index of party polarization, which is acknowledged by Powell (1982) as an advantage, by, as he expresses, capturing the stark differences among parties that, given their broad support for the political structure, would not be labelled as extremist.

Through the angle this paper adopts and its intention (to study in depth a potential consequence of elite polarization), this study contributes to the theory in this case because it seeks to bring new

evidence to bear on an under-researched element of the theory's overall content. In terms of the validity and breadth of the studies that contribute to the consequences of polarization under this theory, it is pertinent to note that they are studies that generally analyse at the national and individual level, focusing in most cases on the collapse of inter-war democracies as a partial consequence of polarization. Likewise, this paper attempts to address the same issue through a broader, and therefore more representative, study. It seeks to broaden the scope from national and individual level studies to a European multi-country range.

Consequently, it is also relevant to mention that the ultimate aspirations of this study are not as absolute compared to the available evidence in this field. As discussed above, the theory literature addresses the consequence of political polarization on constitutional breakdowns, the rise of dictatorships, governance or political violence. In the case of the present study, the consequences are less definite. However, by contributing to a governance piece in Covid-19, it can provide new information to update the consequential branch of this theory.

To conclude, as seen, systems in some contexts are concurring under centrifugal trends, or as Sartori (1976) coins it, polarized pluralism. These systems are characterised by how incentives are located in non-centric positions of the ideological continuum in a party competition context. Party systems have either substituted, rationally, the Hotelling-Downs median voter for the political competition in the extremes of the political landscape, or, as Bale (2003) theorise it, for the competition of two median voter positions closer to the extremes of the spectrum. This study attempts to explore this further, aiming for this spatial theory to develop further evidence for analysing the rational consequences of centrifugal movements in responding to a challenge as recent as Covid-19 with a focus on contemporary European democracies.

### **3.4 Hypothesis**

The present paper attempts to explore how the effects of party polarization impact the government's response to Covid-19. To theoretically prove this, several mechanisms can be derived. Firstly, as the literature explains, governments in a polarized framework have more difficulties in building consensus with opposition parties (Charron et al., 2020). Furthermore, in

this same line, Myers (2020) study the effect of political polarization in the US legislative and executive gridlock in pandemic times. Consequently, regarding the theoretical causal effect, as there is less capacity to build consensus, the extent of the decisions is expected to be lower due to lack of support in the government response from EU countries. Hence, the following central hypothesis is constructed.

**Hypothesis 1 (H1):** *The political polarization a country sustains is negatively associated with the Covid-19 government stringency response.*

Myers (2020) study the effect of political polarization in the legislative and executive gridlock in the US in times of pandemic, and Charon and other researchers (2020) analyze the impact of political polarization under Covid-19 in the excess of death at the European regional level. Thus, this present study merges and expand Myers (2020) evidence on the toxicity of exacerbated political polarization and the novelty of the theoretical background that the COVID-19 paradigm has brought deeply analyzed by Charon and other researchers (2020). In addition, studying this phenomenon at the national level in Europe and providing results at this level brings new evidence different from the already existing qualitative US-based, on the one hand, and the quantitative EU regional-based, on the other hand.

## **4. Research design**

Coming back to the research problem, this study aims to analyse the effect of party polarization in the government response when Covid-19. To answer this research puzzle, a quantitative research is run trying to address if there is a potential cause-effect relationship between the explanatory (party polarization) and the outcome variable (government response). As specified in the literature review section, there is a considerable lack of studies quantitatively dealing with this issue. However, thanks to new data and the fact that the dependent variable (government response) has been quantified and updated in a very refined way, it is attractive to adopt this approach as it is methodologically feasible but academically understudied. Furthermore, as it is a quantitative study, this section covers the description of the data as well as the exposition of the method and subsequent empirical specification chosen to analyse the effect of political polarization on government response in EU countries. Finally, it also includes a sub-section on limitations in which the various constraints of the method and the data are outlined.

### **4.1 Data management**

#### **4.1.1 Databases**

This study uses a plurality of databases to obtain the different variables. The reference database from which the independent variable is extracted and constructed is the Chapel Hill Expert Survey (CHES) 2019 and the 2020 Covid version. In addition, the Oxford Coronavirus Government Response Tracker (OxCGRT) is also used to calculate the dependent variable, the government response index. For this, data from 2020 and 2021 is selected. Finally, the control variables come from Eurostat (GDP per capita), GHS Index (Health Care Index), UN Population Division (Urban), and United Nations Geoscheme (Region). This is explained in more detail in the following subsection on the variable description.

### 4.1.2 Sample selection

The empirical analysis is fundamentally based on the effect of political polarization on the government response over 2020-2021. To reflect two time periods, a longitudinal data set is constructed. Consequently, the unit of analysis is countries repeated overtime in two periods. The first period is delimited from March 2020 to December 2021, and the second period is from January 2021 to December 2021. In comparison, the explanatory variable, meaning party polarization, is measured two times: party polarization 2019 and 2020.

It is important to explain the formal lag between the two variables. Oddly, they are taken in the same model with variables measured in different years, as on the one hand, party polarization 2019 and 2020 with, on the other hand, government response 2020 and 2021. However, if the timings are analysed in more detail, this lag is only formal, as for practical purposes, there is a temporal matching. For example, concerning the 2019 polarization, information was collected throughout 2019 and part of 2020 and was published by the Chapel Hill Expert Survey (CHES) in the summer of 2020. The same applies to the 2020 polarization measure. In this case, the polarization in 2020 is collected during 2020 and part of 2021 and published by CHES in mid-2021. Assuming that, it can be seen that part of the collection and the publication time of each party polarization year coincides with the group of the government response in the two-time years. Thus, although it can be misleading, there is no practical time lag between the independent and dependent variables. It is simply that, formally, party polarization is labelled as in 2019 because it corresponds to that year dataset, but part of the collection and publication time is the following year. The same issue occurs with party polarization 2020.

Therefore, this lag does not present a genuine risk for the validity of this study. As known, the pandemic heated Europe in March 2020; thus, it is reasonable to assume that EU countries responded under their polarization levels published in 2020 but collected in 2019 and 2020 by CHES data. Something similar occurs in terms of timings with 2020 in the longitudinal data. Here, party polarization 2020 is published by mid-2021. Hence, with the available data, it is reasonable to assume that countries faced their government response in 2021 with the polarization levels that, although collected in 2020-21, were published by mid-2021.

Regarding the size of the sample data, countries are repeated two times. Considering this, 26 out of 27 EU countries are taken due to data availability (no data provided by CHES on Luxembourg). Hence, the final number of observations is 52, as countries are duplicated in two time periods.

## **4.2. Description of variables**

*Table 4.1* shows the set of variables included in the different models. In it, there is a short variable description, the type of variable it is, the expected sign, the hypothesis if applied, and the source from where it was retrieved. As can be seen, most of the variables are continuous, and the main variables of interest are constructed based on variables collected in the Chapel Hill Expert Survey (CHES) 2019 and 2020. In addition, a control variable (GDP per capita) applies a natural logarithm. There are two reasons for this. First, it is because large values tend to respond to high skewness. Secondly, it is applied to show the percentage change better. After this description of the variables, the next step is to describe variable by variable the most methodological aspect in the construction or modification process of the variables that lead to obtaining the final result of the definitive variables included in the model.



Table 4.1: Description of variables

	Code	Variable description	Type	Expected sign	Hypothesis	Source
Dependent	Govresponse	The strictness of government policies	Continuous		Dependent variable	OxCGRT, Own elaboration
	pol	The system polarization a country sustains 2019	Continuous	(-)	H1	CHES 2019 & 2020, own elaboration
Independent	health	Country health care preparedness to prevent, detect and respond to infectious disease	Continuous	(-)	Control variable	GHS Index
	urban	The proportion of people living in urban areas	Continuous	(+)	Control variable	UN Population Division
Control	GDP	Natural logarithm of GDP Per Capita (PPP)	Continuous	(+)	Control variable	Eurostat
	region	The different four regions in Europe	Categorical	-	Control variable	United Nations Geoscheme

Notes: Author's elaboration

#### 4.2.1 Dependent variable: Government response index

The dependent variable labelled as Government response index is a composite measure of sixteen different response metrics constructed by The Oxford Coronavirus Government Response Tracker (OxCGRT). The sub-index score represents variables englobing containment or stringency policies, health response, and economic support policies (Hale et al., 2021). The daily index is obtained by averaging these sub-variables mentioned above, each taking a value between 0 and 100. The higher score is translated into an extensive government response (i.e., 100 = strictest

response). Thus, the government response index is a continuous variable. As advised by the source of the variable, this index measures simply the severity of government policies response to face Covid-19. However, this cannot be used to measure the effectiveness of the response (Hale et al., 2021). This variable is quantified daily. To homogenize it, an average of government response is calculated. The average timespan goes from March 2020-December 2020 for Government response 2020 and January 2021-December 2021 for Government response 2021. The first day selected is March 1<sup>st</sup>, as it is when the first government responses due to Covid-19 were registered across Europe. For Government response 2021, when writing the present thesis, the last available date is December 15<sup>th</sup>, covering practically the whole natural year. This index is constructed as in the formula below.

$$index = \frac{1}{k} \sum_{j=1}^k I_j$$

The index constructed by the OxCGRT represents the average of the individual sub-indicators. In the formula above, k is the number of component indicators (sixteen in the case of government response).  $I_j$  stands for the sub-index score in an individual indicator (Hale et al., 2021).

$$GR_{2020,2021} = Ave [GR_{01/03/20} + GR_{02/03/20} (...)+ GR_{31/12/20}] + Ave [GR_{01/01/21} + GR_{02/01/21} (...)+ GR_{15/12/21}]$$

The formula constructed above illustrates the process of averaging in the government response 2020, 2021. *GR* stands for Government response, and *Ave* represents the average.

## 4.2.2 Independent variable: Party polarization

### *Why Left-Right?*

Party polarization is a complex variable to quantify. Parties compete in a unidimensional left-right continuum following the Downsian spatial politics logic, applied in the theoretical framework section. When this competition follows a centrifugal tendency, higher shares of polarization show up, or expressed in other words; polarization represents the ‘degree of ideological differentiation

among political parties' (Dalton, 2008, p. 900). To measure party polarization, the left-right dimension is used as a basis, at the same time following the practice used by different scholars, justifying that this dimension is certainly an accurate representation of parties' and voters' positions (Adams & Merrill, 2000, Budge, 2001; Dalton & McAllister, 2014). As expressed by Huber and Inglehart (1995), the language of 'left' and 'right' collects a series of salient issues that enable citizens and elites to understand the political landscape reasonably. As conceived in academia, the left-right continuum "still reflects essentially the same content that it did forty or fifty years ago" (Inglehart, 1990, pp. 273). Furthermore, in a collaborative academic process, the idea of left-right ideology has been used as a framework to advance evidence in other areas of political science such as political representation, coalition formation, public spending priorities and party competition (Huber and Inglehart, 1995).

### *Expert surveys & ways of measuring party ideology*

Before the political polarization variable can be quantified, it is necessary to measure the parties' left-right positions in the system. One of the main ways of doing this at the party level is party manifestos. Manifestos contain the written policy positions of the various political parties as elaborated by the parties themselves (Benoit & Laver, 2006). In terms of its methodology, it can be criticised that politicians themselves can be biased in writing the programme and not faithfully reflect their true left-right ideology (Dalton & McAllister, 2014). Another way to quantify political ideology is elite position. In this case, similar to manifestos, political representatives are asked to self-place themselves on the left-right scale (see as examples Miller, 1999; Thomassen & Schmitt, 1997). The difference with manifestos is that in the latter, it is external agents who, through a predetermined formula, place the different parties on the same axis. This method faces similar methodological criticism regarding manifestos, but in this case, the bias is intensified as there is no external agent involved.

Two other tools appear in the literature on methods that quantify political polarization. On the one hand, there is citizen perception (see, for example, Dalton & Anderson, 2011), in which citizens are asked, in the form of a survey, to rank the political parties ideologically (Dalton & McAllister, 2014). It is similar to the mass survey, but in this case, it runs at the party level instead of citizens

self-positioning themselves on the left-right axis. Finally, there are expert evaluations, which is the method used to quantify the primary independent variable in the present study. In this method, academic experts are asked to position the parties on the left-right axis and particular political issues of the parties (see, as examples, Benoit & Laver, 2006 and Marks, 2007). One of the main advantages of expert evaluation is that it also brings together criteria such as party programmes (manifesto method), opinion surveys, roll call votes, and recent political activity of the parties (Dalton & McAllister, 2014; Hooghe et al., 2010). Moreover, expert surveys systematize and summarize the average consensus of a significant respondent of experts. Nonetheless, the criticism of biased professional consensus appears in the expert surveys. It defines the risk that several respondents share information and agree on their answers. However, this can be analysed and corrected by comparing estimates from different areas of response (Hooghe et al., 2010).

Due to the needs and characteristics of this paper, it has been decided to use the 2019 Chapel Hill Expert Survey (CHES) and the one launched to quantify variables linked to the 2020 Covid-19 as a database source to quantify the political polarization variable subsequently. In the case of 2019, the survey was administered between February 2020 to May 2020 to 421 experts specialized in EU integration and EU political parties in each specific country covered in the survey (Bakker et al., 2020). Similarly, the 2020 survey was administered in June 2020 and completed by 257 political scientists specialized in the same issues as the one in 2019, being political parties and EU integration (Rovny et al., 2020).

### ***Moving from left-right ideology to political polarization***

All these techniques mentioned above are to obtain the ideological position of the parties on the left-right axis. To capture the left-right ideology, the variable left-right (CHES 2019) is selected and acquired by asking the expert survey the party's position in terms of its overall ideological stance. The result is a continuous variable, meaning 0= Extreme left, 5= Center and 10= Extreme right (Bakker et al., 2020). When attempting to take this left-right ideology to the political polarization level, the present essay resorts to construct the party polarization variable through the application of Dalton's formula (2008, p. 906):

$$PI = \text{SQRT} \{ \sum (\text{party vote share } i) * ([\text{party L/R score } i - \text{party system average L/R score}] / 5)^2 \}$$

*PI* stands for Polarization Index, *SQRT* for square root, and *i* represents individual parties

Once individual parties' polarization is calculated using the formula above, the party polarization index must be constructed. In this case, to build it, all the parties go through the formula above, and then their relative position is summed up to obtain the complete system polarization and not the individual parties one.

$$PI = \sum [( \text{party vote share}_i * \text{party L-R score}_i ) / \sum (\text{party vote share}_i)]$$

Values of the variable from this formula range from '0' as no polarization to '1' representing a fully polarized system, having their parties with a high vote share in the extreme poles on the ideological left-right scale. This formula is beneficial because it measures each party's ideology concerning the system's average ideology and multiplies it by the electoral weight that each party has in this case. Thanks to this formula, it is possible to see how far apart or polarized the parties are, emphasising their weight within the axis.

In the model, in turn, another system polarization variable is constructed, but at a different time. The previous one corresponds to 2019, and this one to 2020. In this case, the construction is done through the following formula, taking the CHES 2020 Covid Survey information. The CHES 2020 expert survey was administered in June 2020 and provided data about the party positioning on different Covid-19 related policies (Rovny et al., 2020). For party polarization in 2020, the variable is constructed with the same Dalton formula.

$$\text{Covid Polarization Index}_{c,t} = \sqrt{\sum_{i=1}^n \left( \frac{(\text{PartyCovidPosition} - \text{SystemCovidPosition})}{100} \right)^2 * \text{VoteShare}_{i,t}}$$

However, although Dalton's formula is the dominant one, it is not the only formula for measuring polarization at the political level. Alternatively, Charon and other researchers (2020) calculate the absolute distance between the most separated parties in the ideological continuum ( $EP = \max(p) - \min(p)$ ). Nonetheless, and acknowledged in this same paper, this max-min formula is criticised for how small, irrelevant radical parties can vastly alter the results, not capturing any distributional dynamics within the min-max range (Charon et al., 2020). Due to the needs of the present paper, Dalton's formula is the most suitable to use. Compared to the min-max formula, Dalton's Polarization Index weights the party vote share, providing a more representative quantification of the polarization in a determinate country. Moreover, as explained above in the critics, the min-max formula can take absolute non-representative outlier political parties.

Alternatively, and in particular contexts, the fractionalization index is also used. However, it is avoided in this essay as counting parties is considered part of political polarization, being the latter a much more complex to measure. Dalton's political polarization measures the relative distance between political parties in a system through their ideological position on the left-right axis, taking into account their weight given by the corresponding vote share. However, political fractionalisation simply counts the number of parties according to their electoral weight. The measure in the fractionalization measurement span from '0' to '1' where '0' stands for a single party controlling all seats in a parliament, and '1' means a perfectly equal distribution of seats among the different parties (Charon et al., 2020). The distance and ideology of the parties are not incorporated, so they measure other concepts. Moreover, in line with this, as the literature argues, political polarization and fractionalization vary independently, thus capturing different aspects (Dalton, 2008).

### **4.2.3 Control variables**

Firstly, the *Health Care Index* is included in the model. Covid-19 has shown how health care readiness is vital to combat the pandemic and, thus, potentially impact the government response needed. This index is methodologically constructed as a composite of different variables representing the health care capacity to prepare for epidemics and pandemics, composed by prevention, detection and reporting rapid response, health system compliance with international

norms, and risk environment (A. Bell & B. Nuzzo, 2021). Data is collected for 2019 and 2021 measures retrieved from the Global Health Security (GHS) index. Secondly, *urbanization rates*. There is a vast literature explaining how higher urbanization and density rates are associated with a higher risk of Covid-19 contagion (Christensen & Læg Reid, 2020). Thus, the urban population is defined as the proportion of people living in urban areas (United Nations, 2018). United Nations Population Division collects the source of the data. The variable is continuous, expressed as the percentage of urban residents per 100 total population in 2020.

Thirdly, a *region* variable is included in the model. The shock or arrival of Covid-19 in Europe followed an uneven pattern. Firstly, the southern countries were most affected, especially Italy and Spain, and then moved on to the rest of Europe (Rodríguez-Pose & Burlina, 2021). To control for this unevenness in the impact of Covid-19, a variable of region is included as a category. This variable categorizes from 1-4, indicating the different areas in Europe, North, West, South and East (United Nations Statistics Division, 1999). The source of the variable is the United Nations Geoscheme. Finally, *GDP Per Capita* (2019 & 2020) is included. In this case, GDP per capita is considered because more resources are often associated with greater remote working capacity and the maintenance of social distance. The indicator is calculated as the ratio of real GDP to the average population of a specific year (Eurostat, 2020). The unit of measure is thousands of euros, and the source is Eurostat. Also, this variable applies a natural logarithm for the same reason as mentioned above.

### **4.3. Method**

First and foremost, it is essential to specify that the estimation method employed for the model specification is a panel or longitudinal data. Panel data method is used for data containing several individuals in a time-series format. Thus, two dimensions are required to adopt this method; a time series and a cross-sectional individual's measurement. Simple OLS regressions at different times were considered, but the panel data method presents a set of advantages that led to the selection of this method. Panel data permits integrating the time variability into one single model, being capable of measuring the variability between and within groups. Further, longitudinal data possess a higher capacity for explaining the complexity of human behaviour and, consequently, the data

derived from it (Hsiao, 2006). Given that the data has individuals, which in this case are countries, it will be discussed below how these countries have their intrinsic characteristics. Thus, the diversity and complexity nature of the observations is strongly present. Initially, the method considered was Difference in Difference, which allows to capture the impact of a specific event between two groups and between two period of time (before and after). At the first time of the data, the countries did not suffer from Covid-19, whilst in the second time, countries already were impacted by Covid-19. However, for a difference-in-difference method, it is required a control group. This control group cannot be identified with this set of data as either none of the countries were affected by Covid-19 or all were affected (albeit at a different level). The advantage of panel data is that it can provide a time effect to the data and observe its variance. This is particularly interesting when the data incorporates an external shock, as in this case, in the form of a pandemic. In addition, the statistical software STATA was employed for every estimation made in this paper. Furthermore, stepwise modelling is applied. For this, several models are designed through forward selection. This strategy is selected to study how the models experience different results, including different variables.

### 4.3.1 Empirical specification

The following model specification is constructed to outline the strategy followed and include all the complex information into one formula.

$$GR_{it} = \alpha_i + \lambda_t + \beta_1 Polarization_{it} + w'_{hit} \alpha_t + v_{hit}$$

In the formula above, the  $GR_{it}$  represents the outcome of interest representing the government response at country  $i$  in time  $t$ . Moreover,  $\alpha_i$  and  $\lambda_t$  denote country and time fixed effects, respectively. The vector  $w_{hit}$  stacks for several characteristics: country's health system preparedness, level of urbanization, economic situation and regional location. The error term is denoted by  $\mu_{it}$ . The formula represents a panel longitudinal multivariate regression. It is constructed to answer the central H1: The political polarization a country sustains is negatively associated with the Covid-19 government stringency response.



## **4.4 Limitations**

The present study shows a set of limitations described and analysed in this section. It is of utmost importance to exercise consciousness to be aware of this paper's current limitations. The main limitations revolve around data, sample size, and model constraints. Regarding the data, it is recognised that the main problems are in the construction and on capturing the concept ultimately. For the model, some econometric limitations emerge.

### **4.4.1 Data constrains**

One of the first data limitations in the present study is the construction of the party polarization variable. As explored in the section above, party polarization from 2019 corresponds to the CHES dataset 2019, and polarization 2020 belongs to the CHES Covid dataset 2020. As for the construction, both variables take the Dalton formula expressed above to construct and bring the polarization variable from the individual party to the system level. However, the polarization variable for 2019 uses the left-right ideology basis to quantify the distance among parties. In contrast, the 2020 polarization measures use the left-right economic-contain variable for its construction. The economic-contain variable quantifies the party's position on responding to the COVID-19 crisis, whether the response was more on prioritizing containing the virus or keeping the economy open. When using for both Dalton's formula, deciding to keep the same methodological construction aims to seek homogenisation between variables. This allows the variability between groups and the min-max to result similarly between both measures. However, this nuance in the construction may detract from the internal validity power in the statistical analysis and interpretation of results. The researcher is aware of this but assumes this limitation because, being a recent subject of study, the lack of homogenised data over time leads to these challenges. However, it is worthwhile being able to extend this study, including the 2020 polarization variable, because methodologically, it has been possible to establish mechanisms for its homogenisation.

Another relevant issue to highlight is the bias in data measurement on the polarization level and the limitations in quantifying a concept such as party polarization. To contextualise and introduce

this limitation, it is helpful to return to specific theoretical issues. As early expressed, the attention that polarization draws is more intensively dealt within the media field than in academia (Charron et al., 2020). In addition, as expressed in the literature review, polarization in the academic field intensifies its study on a qualitative level. Once this said, certain problems in fully capturing the concept arise when quantifying party polarization. For instance, political polarization can be constructed as soon as data is available, in this case, from the CHES dataset. However, as its measurement requires a slow period in which experts are asked to measure across certain parameters, the levels of polarization are updated every certain spaced period of time. This makes this variable, which is static unless it is updated, not permeable to events that may affect the variability of political polarization. For instance, an issue that has been given much thought in terms of the limitations of the variable is its susceptibility to change due to electoral processes. If polarization is being analysed at the party level, electoral cycles and government changes are relevant factors when studying the variability of polarization in a given country. After the publication of some data to construct polarization, there may be changes of governments between years that, in that case, this variable is not capturing because it does not undergo constant updating.

In addition, another aspect that the variable, when quantified, may not be capturing is the government effect of a particular country. This is seen very clearly with the example of Italy. When constructing the polarization for Italy, the electoral weight is dominated by the 5 Stars Movement, with a 32.7% share of the vote given by the general elections that took place in 2018. This could make sense when Conte was prime minister as he started as an independent politician but usually close to the sphere of the party that won those elections (5 Stars Movement). However, when Mario Draghi replaces Conte, mainly leading the governmental response, the quantification of polarization cannot capture this when this change potentially alters both governmental response and political polarization levels.

#### **4.4.2 Sample size**

Initially, a one-time regression was to be performed where the size of the observations was a result of 26 countries available with the data. However, when performing a panel data with two periods of time (2020 and 2021), among other things, one of the advantages of performing a panel data, in

this case, is that the size of the observation's doubles from 26 to 52 observations. However, the sample size remains limited. This is because, at the moment, the government response is coded at the country level; given that the answers have been operationalised in national code, the observations, consequently, have to be at the country level. As the focus of the study is designed at the European level, it is unavoidable that the size of the observations is limited. However, one must be aware that the replicability of the potential results is inevitably limited. This means that the scope is very context-specific for the given characteristics in Europe. Therefore, trying to export results to other places may be a risky process given the features of the study. In the case it is to be replicated, this has to be linked to a rethinking of the characteristics of the countries or region it is intended to study potentially. Hence, the results' generalizability is limited by the small sample size and the focus on a specific group of countries. To limit the negative consequences of small data size, a stepwise model is applied, a limitation on the number of independent variables, and finally, the inclusion of robustness checks in the model. All this will be explained in more detail in the following section.

#### **4.4.3 Model restrictions**

To a certain extent, this study pretends to explain the motivation behind the government response undertaken by the EU countries. Provided by the literature, there is a reasonable academic background to potentially explore the variation in the extent of the government response from the EU countries explained by their level of political polarization. However, and as a model limitation, it is relevant to be conscious that isolating causal effects associated with Covid-19 government response policies is statistically complex as their government response exerted by the countries is typically related to the level of virus spread at that time (Hale et al., 2021). Hence, endogeneity problems are expected to be reflected in the results as a consequence.

Moreover, and related to this, within the model, multiple specific factors are out of control in this study. For instance, as an example, legal limitations can disturb the econometric isolation of the outcome variable (government stringency). More specifically, Sweden's illustration is a clear example. In its case, during the pandemic, Sweden could not consider taking a robust governmental response because its Constitution prevented it from doing so. In this case, the Constitution did not

permit the adoption of lockdowns or generalised national states of emergency, conditioning the government, regardless of its will, to take measures based on recommendation rather than a legal obligation. Until a COVID lockdown law could be reformed and passed (introduced in January 2021), legal constraints have impacted countries' ability to modulate their response to Covid-19.

Lastly, in the panel data model to be carried out, two-time points, 2020 and 2021, are the ones inherent in the model. This is unavoidable because when studying Covid-19, a phenomenon that has been around for almost two years at the time this paper is published, there is no other way, given the polarization variable that in this case varies every year, to increase the time points in the model. Although this is irremediable, it has limitations. A short panel data<sup>1</sup> is incurred by having a low number of time moments. In addition, a low number of observations can lead to a certain loss of precision. Lastly, it is taken into account the limitation of research bias because the researcher is the only one interpreting the results and data.

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<sup>1</sup> A short panel is characterised for its few time period (small T) and many units of observations (large n). In this case, the few T-characteristic is fulfilled.

## 5. Results

This section is divided into two main parts. First, a descriptive analysis is included where the nature of the variables and the most graphic relationship between them is explored. In addition, this section contains a summary statistics and graphical displays of the main variables of interest. Secondly, the statistical results of the different specifications are included. Here, the principal regression and their respective models are integrated, including a discussion of the results linking it to the corroboration of the hypothesis presented in the previous section.

### 5.1 Descriptive analysis

To better understand the dataset at hand and know its graphical relationship, in this case, it is essential to carry out specific actions with a descriptive focus. For this reason, deductively, a statistical summary is included first, and secondly, the data visualisation and the corresponding analysis is incorporated. As described in the variable description section, the continuous nature of the variables (except for the region variable) can be observed in *Table 5.1*. Furthermore, in the case of the control variables, the effects attributed to the application of natural logarithms in GDP is shown, transforming it into more manageable numbers.

Table 5.1: Summary Statistics

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Government response	52	59.95981	8.07167	43.25	79.47
Polarization	52	.1480118	.0689441	.02753	.285071
Health	52	57.16346	7.817979	39.3	72
Urban	52	73.08231	12.78502	53.76	98.079
Lngdp	52	10.24832	.2896034	9.705036	11.04132
Region	52	2.653846	1.15274	1	4

*Notes:* Author's elaboration

Furthermore, it has been decided to include a graphical analysis to visualise the different observations (countries) and their other distributions in the graphs. To do so, first of all, it is relevant to observe both relationships between the government response and the polarization measure. This relationship can be seen in the scatterplot represented in *Figure 5.2*. This scatterplot shows how the government response varies across the different categories. Furthermore, a slight negative relationship between the government response variable and the level of political polarization during the pandemic is denoted thanks to the fitted values line.

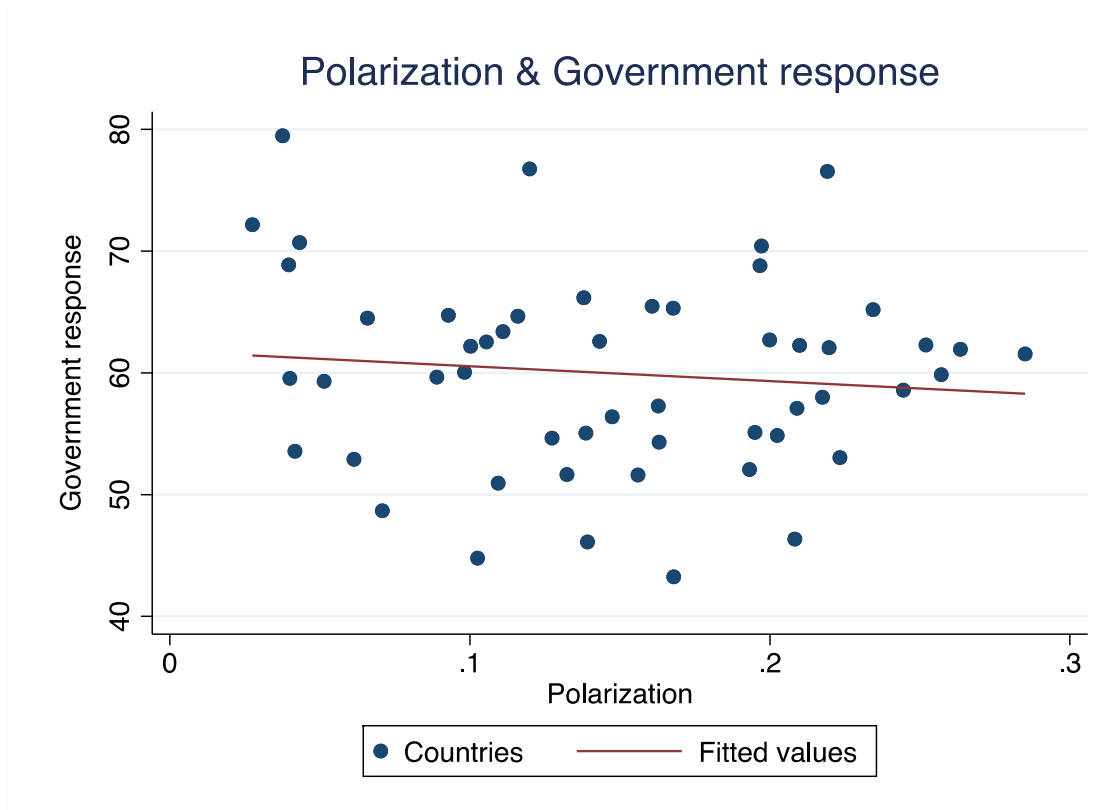


Figure 5.2: Scatterplot for Polarization & Government response

*Notes:* Author's elaboration. Data used from Oxford Coronavirus Government Response Tracker and Chapel Hill Expert Survey 2019 & 2020

Although this negative relationship does not appear clearly in the figure, this graphical display provides some value in a preliminary visualisation of the behaviour of the variables. In this case, it should be clarified that in no case these relationships are analysed in causal terms and that statistical action must therefore be taken to deepen and refine this relationship econometrically.

## 5.2. Analysis of results

The analysis of results is divided into two parts. First, the estimated method is explained and justified. Then, the results displayed in regression tables are included, and these results are analysed by linking them to the previously established hypothesis.

### 5.2.1 Model Estimation

First, it is elemental to mention that the estimated method employed for the present analysis is a panel or longitudinal data. Panel data enables the quantitative study of several individuals with multiple observations over a time period. The current research meets both conditions for applying the longitudinal data method. Individuals, in this case, are the 26 EU countries, and the time period is the years 2020 and 2021. This method allows to compare those units of analysis (countries) and estimate their variation between and within a certain period. In this case, it takes advantage of, on the one hand, the updating of the daily data of the dependent variable (government response). Furthermore, on the other hand, the benefit of being able to provide an update of the political polarization, including the Covid-19 external shock, being capable of applying panel data on a very recent event and potentially providing novel evidence. Moreover, the present study employs the statistical software Stata for all the statistics estimations executed in this analysis.

Before presenting the principal regression, it is intuitive to explain the previous steps taken to arrive at the final results. The first step to take is to find out whether the panel data is balanced or not. This is important to know whether the data being used suffers from the inobservance of elements. The check shows that the longitudinal data is “strongly balanced<sup>2</sup>” (see appendix B.1). This makes sense as it is due to the small sample size. Furthermore, these studies may suffer a multicollinearity<sup>3</sup> problem when constructing the model. Therefore, to avoid multicollinearity, it is decided to check the multicollinearity of the models. Once done that through a VIF test, there is no collinearity problem between the variables, meaning that variables do not overlap when measuring concepts.

Moreover, before executing a regression on panel data, it is necessary to know whether to take the fixed or random effects method. This is done to determine which effect is more accurate to assume unobserved heterogeneity. For this purpose, the Hausman test is carried out. The results obtained from this test indicate that with the available data, a preliminary choice has to be made in favour

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<sup>2</sup> If it is strongly balanced, it means that it contains all elements observed at all time of the model.

<sup>3</sup> Multicollinearity appears when there is high intercorrelation among variables



of the random-effects model<sup>4</sup> (see appendix Figure B.2). Selecting random effects makes sense since the random effects allow the estimation of the coefficients of the time-invariant variables. In the case of the present model, control variables such as region are time-invariant (the classification of regions is static over time), so random effects are beneficial for this analysis. In addition, another test is required to check that, once the Hausman Test shows that random effects are preferable, whether to opt for OLS regression or that again random effects is the best option. For this purpose, the Breusch-Pagan Lagrange multiplier (LM) test is carried out. This test shows that, once again, a random effect method is more suitable than an OLS regression<sup>5</sup> (see appendix Figure B.3).

## 5.2.2 Hypothesis testing and interpretation of results

When analysing the tables, reference is made to different specifications. Each specification refers to a column in the panel data regression of the model. Hence, specification (1) represents the simplest version, which includes the explanatory (political polarization) and dependent (government response) variables. Specification (2) include that basic model adding four different control variables (urbanization rates, GDP, health care index, and region). Specification (3) augment the previous one, including a time effect. Finally, specification (4) also adds a country fixed effects and a robust check. As previously argued, all specifications are done through random effects.

The central hypothesis in the present study is to measure the effect of political polarization on the level of EU countries government response to tackle Covid-19. Provided by the previous literature review, a negative relationship between the two variables is hypothesised. That is, the greater political polarization a country sustains is negatively associated with the Covid-19 government response. Turning to *Table 5.3* panel data regression, it is seen how in specification (1) a

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<sup>4</sup> As shown in Figure B.2 in the appendix, the p-value is 0.12. The null hypothesis for this test is that the difference in coefficients is not systematic, meaning that random effects are preferably over fixed effects. Thus, the null hypothesis states that the errors are not correlated with the regressors. If the p-value of the test is higher than 0.05 ( $0.12 > 0.05$ ), the null hypothesis is accepted, and random effects are preferable over fixed effects.

<sup>5</sup> As shown in Figure B.3 in the appendix, the p-value is 0.0001. The null hypothesis for this test is that variance across units is zero. Hence, that there is no significant variance across entities, meaning no panel effect, having to employ OLS regression. If the p-value of the test is lower than 0.05 ( $0.0001 < 0.05$ ), the null hypothesis is rejected, revealing how it exists variance across entities sustaining that random effects are more suitable than OLS regression.

significance at the 5% level holds. Moreover, the significance relationship is negative, aligned with most of the specialized literature previously exposed. The coefficient for polarization levels can be misleading. This high coefficient results from an elasticity issue in the party polarization variable. When government response varies from 0-100, and party polarization oscillates in 0-1, this can occur. Hence, when interpreting this coefficient, a 0.1 unit increase (in a 0-1 scale) in the polarization level leads to a decrease by 24.49 points in the government response on a 0 to 100 scale. Moving to specification (2), when the control variables are included, the explanatory variable remains significant at the 5% level, maintaining high significance levels in the model.

Table 5.3: Government Response Determinants

	(1)	(2)	(3)	(4)
Polarization	-24.491** (9.727)	-21.738** (10.514)	14.456* (14.865)	-7.098* (24.200)
Urban		-0.061 (0.114)	-0.091 (0.104)	-1.016** (0.365)
Health		-4.323 (2.803)	-5.954** (2.598)	8.029 (12.047)
Region		1.043 (1.211)	0.999 (1.101)	6.483 (9.366)
GDP		7.947 (5.202)	10.560* (4.798)	-1.812 (38.179)
Observations	52	52	52	52
Controls	N	Y	Y	Y
Time FE	N	N	Y	Y
Country FE	N	N	N	Y

Note: Specifications (1) includes the main explanatory variable. Specification (2) add the controls displayed in the table, and specifications (3) and (4) further consider time and country-fixed effects. GDP is in natural logs in order to standarize the comparison. Results in the table were obtained with the Stata command `xtreg`.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors in parentheses.

Moving to the results of specification (3), it shows that political polarization loses some significance, being significant at the 10% level and that a sign change occurs. As was anticipated in the methodological part, endogeneity problems may arise due to the difficulty of econometrically isolating the outcome variable (government response). These problems emerge here when this change of sign appears in the specification (3). This occurs probably due to omitted variables from the model. These results also show a possible bi-directionality endogeneity in the variables, where party polarization impacts the government response, and the reverse may also be occurring. Furthermore, by the time effects are included, significance is more easily lost due to a relatively limited number of observations. In this specification, it is relevant to note that the time effect is significant at 1%, providing the information that the time applied in the panel data has a presumable impact on the model variation. Furthermore, specification (3) shows how two control variables (GDP and health) appear significant at a 10% and 5% level, respectively. As for health, the coefficient sign is negative, in line with the expectations. The sign of this specification appears positive, providing information that richer countries (wealth measured in terms of GDP per capita PPP) have faced more substantial levels of government response.

Lastly, in specification (4), when country fixed effects are included, the explanatory variable remains as in specification (3), significant at a 10% level. Although decreasing in the last two specifications, this significance is interesting to mention. It shows that despite the inclusion of a country and a time effect, the robustness of the model and in this case of the explanatory variable is constant. Furthermore, the sign of the coefficient returns to negative, showing that although there are endogeneity problems, when the fixed country effects are included, the sign reverses again and returns to negative, showing a certain constancy in the model, despite the endogeneity. The implications and output of these results will be discussed in more detail in the discussion section.

## **6. Discussion**

This section attempts to analyse the results obtained in the previous section in greater depth. These will be studied in terms of their significance and overall contribution. Also, certain limitations already explored in the method section are included, focusing on overcoming them with suggestions towards future research in this field. For the sake of context, it is relevant to return to the initial research problem. Initially, this study aims to explore the motivation behind EU countries for taking different government decisions. Moreover, this research aims to study if the decisions were determined by the political polarization the country sustained, understood as an elite partisan division on policy aspects. To do so, the research question was formulated as to what extent has party polarization shaped EU member states responses to the Covid-19? A quantitative analysis is carried out to answer this question, departing from a descriptive study and a panel data regression.

### **6.1. Practical implications**

The panel data regression with four specifications provides interesting information and results in line with the specialized literature covering this topic. More particularly, specifications (1) and (2) from the panel data regression sustain in their coefficients a negative relationship between political polarization and government response. However, this significance level is reduced when specification (3) and specification (4) are introduced, hence, when time and fixed effects are included. Furthermore, it is relevant to interpret the coefficients of the different specifications. Concretely, specifications (1) and (2) provide high coefficient levels being significant at 5% and 5%, obtaining, thus, attractive results to discuss.

Turning to the capacity of the present study to contribute to general knowledge, it is important to highlight how this study establishes, with certain limitations, a base of study in such a novel and understudied topic as polarization at the political level, in a quantitative way, and with a recent external shock called Covid-19. The constructed econometric model aims to establish a quantitative relationship to test the central hypothesis. The results show, preliminarily, that the

relationship between the two variables coincides with the one set previously in the hypothesis. This is, therefore, consistent with the theory and the literature.

The present results establish a substantial connection with the theory set out above. On the one hand, the left-right spatial model established by Downs (1957) can be conceived as a useful tool and the common framework for studying party systems and party competition. On the other hand, combined in this study with a quantitative research has provided, to a certain extent, explanatory power to understand the government responses adopted by the EU countries during Covid-19. More specifically, the concept of polarized pluralism introduced in the rational choice framework has been detected of great significance in obtaining the results shown. Polarized pluralism occurs when high ideological distance and party fragmentation is sustained (Sartori, 1976). This study attempts through its analysis to provide an answer to the most direct consequences of this centrifugal dynamics, englobed by the concept aforementioned. Within these immediate consequences of an exacerbated polarized pluralism, the results of this study are in line with those pursued by Wintrobe (1991) in the theory where he explores the idea that the higher the levels of polarization of a political system, the higher the chances for each side of the spectrum to recur to non-collaborative attitude. Presumably, these results reinforce this condition, in which, under these conditions, high levels of polarization contribute to greater inaction in response, potentially due to a lack of collaboration between factions that pursue a zero-sum game.

Moreover, these results are in line with much of the specialised literature. More specifically, they are in line with the literature on the effects of political polarization on political governance. As expressed by Charon and other researchers (2020), highly polarized environments disable the building of extraordinary consensus, which is required to take extensive measures in the government response. The results also build on the evidence found by Cairney (2016), who theorises that governments in a relatively low-polarized party system may justify more easily high-risk decisions claiming that they are based on public interests rather than special ones. Consequently, government parties in a highly polarized framework may prefer to assure the core support, instead of finding a broad consensus that a fraction of the society might not legitimize. More broadly, this study also presumptively shows how symptomatic legislative gridlock affected by party polarization in the face of an external shock can influence the government response. Thus,

this study largely contributes to studies that reveal how high levels of polarization generate political paralysis and legislative blockage (Barber and McCarty, 2013; Binder, 2015; Lee, 2015). More concretely, it is particularly compelling how this paper contributes to the extension of findings pointed out by Myers (2020). This author points out how, in the US, in the context of a previous disease, the Affordable Care Act (ACA) programme unveil how partisan polarization and conflict can hinder the federal government's legislative action when facing pressing policy issues and budgetary concerns. This incapacity to resolve policy dilemmas generated delays and reduced funding, contributing to unnecessary deaths and suffering. Taking this to the present study, although it's something out of the scope, the lack of a stringent government response could be associated with inefficiency and damaging health consequences.

In this context of novelty, the present study can open new doors and directions on an issue that needs further investigation. This case provides a glimpse into the effect that Covid-19 has had on political polarization in EU countries and its impact on the response and thus the governance of European countries. It, therefore, aims to extend what is found in the literature approaching the relationship between governance and political polarization. More precisely, the present study contributes to the concrete literature covering governance in times of external pandemic shocks, such as Covid-19 in this case, and its implication for the governance architecture. Conceptually, this study represents a blend between Myers (2020) scope of research and the analysis carried out by Charon and other researchers (2020). Myers studied the effect of political polarization in the legislative and executive gridlock in the US in times of pandemic, and Charon and other researchers (2020) analyze the impact of political polarization under Covid-19 in the excess of death at the European regional level. Thus, this present study merges and expand Myers (2020) evidence on the toxicity of exacerbated political polarization and the novelty of the theoretical background that the COVID-19 paradigm has brought deeply analyzed by Charon and other researchers (2020). In addition, studying this phenomenon at the national level in Europe and providing results at this level brings new evidence different from the already existing qualitative US-based, on the one hand, and the quantitative EU regional-based, on the other hand.

The control variables' results also have meaning and harmony with the evidence in the field. As for the health variable, its negative coefficient means that countries with a lower level of health

care systems tend to have higher levels of government response. It is partly because if a country's health care system has more difficulty absorbing mass hospitalisations, the government is likely to be more forceful in its government response to Covid-19 to avoid the collapse of its fragile health care system. Some academic evidence sustains this direction. For instance, a study containing five Latin American countries shows how due to their lack of a robust health care system, their strategy was based on quickly implementing high stringency COVID-19 measures while simultaneously scaling up their health care capacity (Benítez et al., 2020). The GDP control variable also appears significant at 5%. This makes sense as richer countries can more easily afford to expose themselves to a lockdown by sacrificing economic power to avoid Covid-19 contagion. This logic implies that poorer countries suffer more from the costs of these measures than richer countries (Miguel & Mobarak, 2021).

## **6.2. Further research**

A set of limitations oriented to future research emanates from this study. On the one hand, linked to a fair but to a certain extent a limited number of observations, the present study leaves room for taking this scope to other levels of analysis such as Nomenclature des Unités Territoriales Statistiques (NUTS). NUTS represent a geographical system in which EU regions are classified and divided into hierarchical groups. This data availability at the regional level offered by NUTS allows quantitative research with a cross-border scope within the EU regions. Furthermore, by regionalising the unit of analysis, the study could achieve more observations and validity power. If such a study were to be carried out, similar results would be expected. The theoretical causal relationship between variables should not be inverted by regionalising the focus of the study. However, special attention should be paid to the particular characteristics of the regions. For example, at the level of competencies emanating from the different political systems, it would be substantially complicated to bring together countries with disparate levels of decentralisation. Therefore, perhaps, the analysis must be limited to regions with a similar degree of decentralisation. In this case, due to several problems, the NUTS option was not taken. The government response level is generally measured and exercised at the national level (no government answer is coded regionally), so the most suitable approach, in this case, was to do it at the national level.

As already mentioned with the data problem in the methodology section, the issue of reflecting the government effect and the possible government changes due to electoral cycles altering the party polarization variable has to be considered for future research. Therefore, future research with more time and resources can explore the quantitative inclusion of these two concepts in this same variable in order to refine it further. As can be seen in the theory section, political polarization is a concept that has been under study for several decades now. Still, simultaneously it is understudied at the quantitative level, where there is ample room for improvement in the variables that try to capture it. Especially now that polarization is a topic of growing media interest, this effort can more easily attract attention.

Linked to this, the limitations exposed in the methodology section indicate, among other things, the difficulty this model presents to isolate econometrically, more precisely, the independent variable. With the pass of time and more available information, exploring new determinants from the ones already included is relevant. Hence, the present results are sensitive to context-specific characteristics. Thus, this study contains representative power. In this case, the model represents fairly good the merge of different countries into one single study, obtaining results that capture and condense that divergence reasonably well. Therefore, with certain limits, it represents a specific moment and relationship in Europe that can be of general interest. However, these results have to be nuanced in generalizability terms. Due to the scope of the present research, which has a regional focus (Europe), it is pertinent to be aware of generalising the results. As each country or group of countries have its own determinants and driving factors that determinate different variables, the ability to generalise is somewhat constrained. For this study, the control for various issues has to be oriented to the country's characteristics or the group of countries. Hence, these results conclusions have a limited capacity to be exported. The validatory power is highly linked to the context-specific of the different region, country, group of countries or continent of potential study.

Furthermore, it may be of great interest for future research to take the present study to the European political parties' level and explore their positions on the extent of the government response. As done in the present paper, it is interesting to analyse it at the government level because government response occurs at that level. Nonetheless, moving the scope to the attitudes and positions of EU



parties, taking advantage of the new CHES 2020 database (where data is provided at the European political party level), can bring new evidence in the field of understanding the position of EU parties on Covid-19 issues. This can shed light on the study of European political parties in Covid-19. The results of this potential study can provide food of thought and contribution to party behaviour and political systems.

Moreover, as explained in the results, it may be interesting to explore for further research if the lack of a stringent government response could be associated with inefficiency and damaging health consequences. In other words, whether countries that decided to take a laxer strategy is associated with, as Myers (2020) expressed with his previous studies in other pandemics, unnecessary deaths and suffering. Although it is out of the scope of this study, it can provide compelling evidence in terms of efficiency and good governance for present and future pandemics.

Finally, another important aspect to consider for future research is the new paradigm that is opening up as this essay is being written. In the midst of the sixth wave, the Omicron variant is becoming the dominant variant in Europe, replacing its predecessor, Delta. The most preliminary information on this variant, as its most essential characteristics are still being investigated, is that its level of contagion is much higher than the previous one, but that its level of lethality is significantly lower than that of the Delta variant (Sheikh et al., 2021). Therefore, if this remains the case, it may alter the health situation regarding the pandemic in the future, opening up new avenues of research. Because of this, at the time of writing this study, the pandemic is not yet over and is constantly evolving, existing the possibility of suffering from new variants and pandemic waves. This situation requires updates that can bring new evidence and results if desired.

## 7. Conclusion

Why are some governments stricter in their response to Covid-19 than others? Can party polarization play a role in this? From this reflection stems the concern to study what is covered in this study. This research aimed to explore the effect party polarization has on the extent of the government response in EU countries during Covid-19. A quantitative analysis was designed to answer the following research question: To what extent has party polarization shaped EU member states responses to the Covid-19? The aim was to prove if political polarization has a quantitative significant relationship with the severity of the government response, including the two years that Covid-19 has taken place for now, 2020 and 2021. The expected findings were materialised in the form of the main central hypothesis, where it was expected to obtain a negative relationship between both variables. Hence, potentially, higher polarization levels would negatively affect the response exercised by countries in the EU, diminishing it where appropriate. The rational choice theory contributes fairly through polarized pluralism, providing a solid framework for understanding party competition. More specifically, it complements on why centrifugal forces occur, and their direct consequences.

Based on this type of study, the obtained results may allow to answer the initial research question and can be cautiously concluded that higher levels of elite polarization exert negative influence in EU's countries in terms of lower government response to curb Covid-19. The results timidly indicate how legislative and executive inaction can be produced due to political polarization dynamics. In line with what the theory exposes, polarized pluralism can have direct consequences in countries' governance. Furthermore, these findings feed to the effects of political polarization on the lack of governance productivity. In this field, Myers (2020) pandemic study aligns with the one exposed here, where polarization can delay or, in this case, potentially reduce the extent of government responses. Building on Charon and other researchers (2020) study, these results expand the novel studies dealing with Covid-19 polarization and its harmful effects. Moreover, this study fills the gap presented by the literature in three different aspects: US-based, qualitative methods, and social polarization dominated focus of study. Hence, this study contributes with a different scope, methodology and geographical place of study, elaborating on this detected

scarcity.

Although results point in one direction, the conclusions of the present study have to be taken with caution. Despite the effort that has been made to design the model to reduce the econometric risks, it has become clear that the response of governments can respond to a vast number of variables, many of which are beyond the control of this study. To this end, it should be noted that this study is characterised as being very context-specific based. The model's endogeneity problems suffer from building an awareness of the ambition to interpret these results.

Thus, future research should take this and other factors into account. Future quantitative models must consider new factors that directly affect the variability of the response by governments. This goes hand in hand with the fact that, over time, the available data and scientific evidence in this field is expected to become more extensive. Moreover, further research should look into new ways to increase party polarization's methodological robustness. The advantages of being able to quantify this concept are undeniable. However, in an effort of refinement, it would be interesting to be able to potentially incorporate different aspects that would make this variable capture new challenges. Future studies could also address this scope of study at the EU regional and political parties' level to understand the implications of these results better. Given the substantial opportunity that CHES data opens up by including these same variables at the level of political parties, it would be relevant to see how different parties in Europe stand on different issues emanating from the Covid-19 external shock.

In essence, this study provides new information available at the academic level regarding the consequences of political polarization in EU countries specific governance. In addition, these results can facilitate the necessary scrutiny and accountability process to which various governments will sooner or later have to face. Accordingly, it can be a departure point for exploring different angles within the framework provided, under a common denominator: divisive *politics* for erratic *policy*.

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# Appendix A

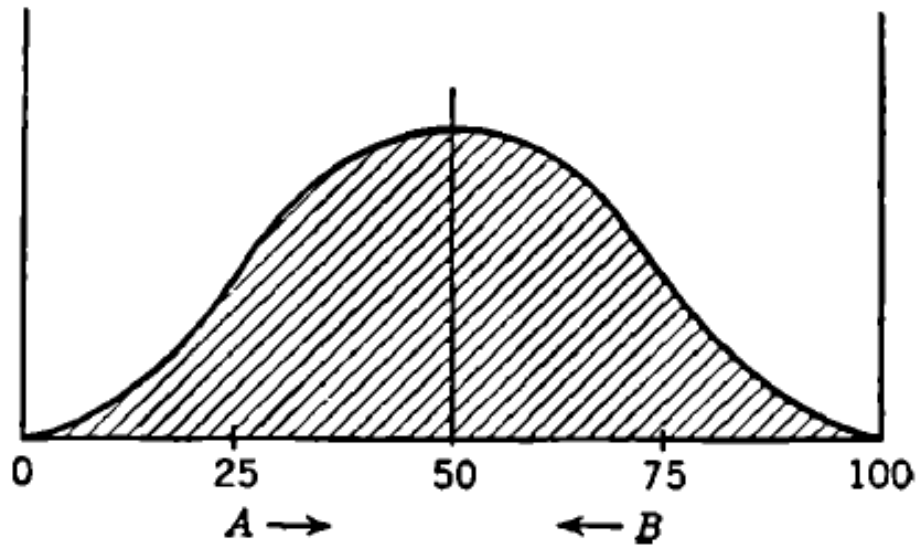


Figure A.1: The median voter theorem

Notes: From *An Economic Theory of Democracy* (p.118) by A. Downs, 1957, Harper & Row.

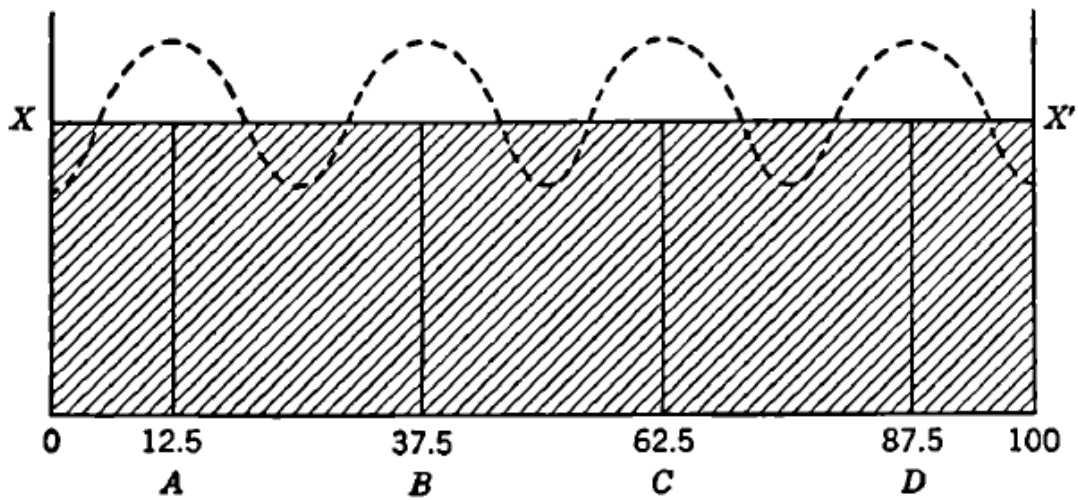


Figure A.2: Polarized pluralism

Notes: From *An Economic Theory of Democracy* (p.122) by A. Downs, 1957, Harper & Row.

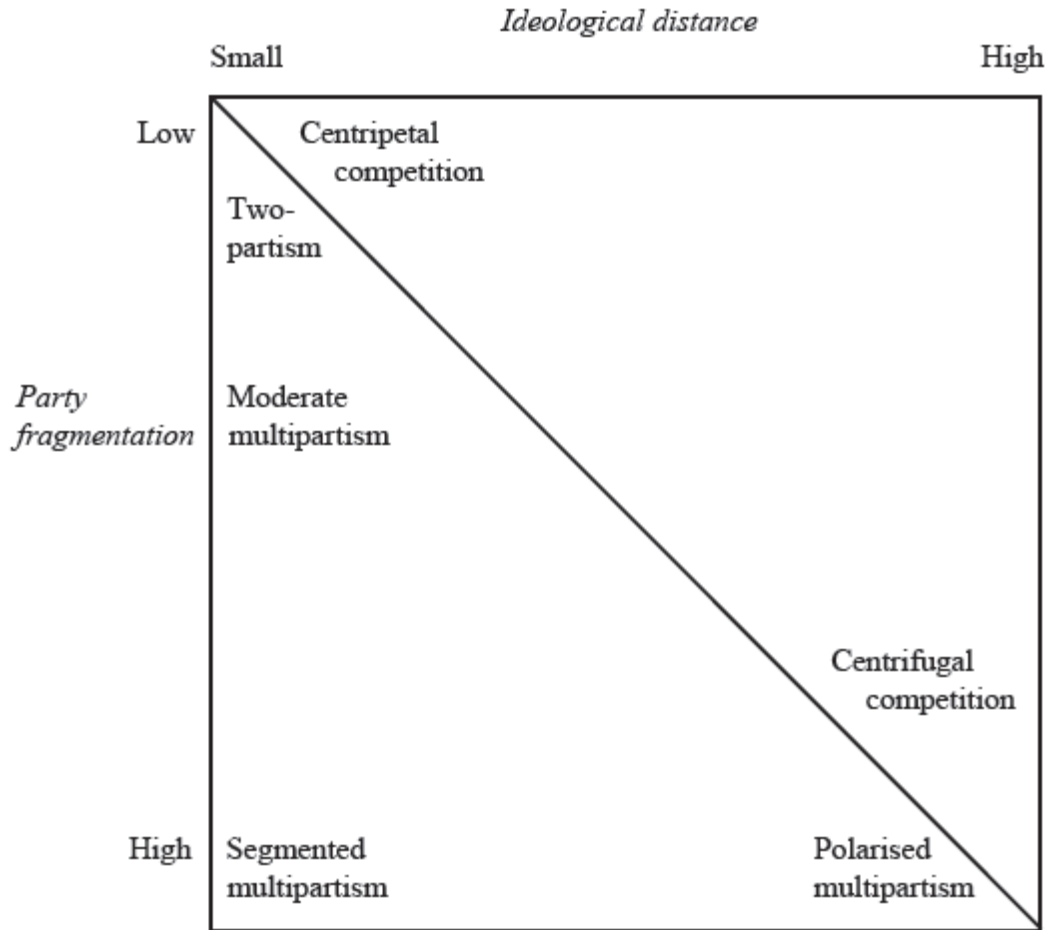


Figure A.3: Types of party competition

Notes: From *Parties and party systems: a framework for analysis* (p.260) by G. Sartori, 1976, Cambridge University Press).

# Appendix B

```

panel variable:  id (strongly balanced)
time variable:  t, 0 to 1
delta: 1 unit

```

Figure B.1: Data balance

Notes: Author's elaboration

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
pol	-27.32381	-24.59696	-2.726849	1.757058

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

```

chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
        = 2.41
Prob>chi2 = 0.1207

```

Figure B.2: Hausman test

Notes: Author's elaboration

```

Test:  Var(u) = 0
        chibar2(01) = 13.99
        Prob > chibar2 = 0.0001

```

Figure B.3: Breusch-Pagan test

Notes: Author's elaboration