Electoral Alliances in a Multilevel Perspective

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Abstract

This thesis investigates the strategic dynamics of Electoral Alliances (EAs) in multilevel electoral systems, focusing on Western European democracies. EAs, defined as joint party lists, can be a critical tool for political parties aiming to achieve electoral success, influencing government composition, voter behavior, and the stability of party systems. Due to methodological nationalism the regional variation of factors affecting EA participation and the spillover in EA participation from regional to national elections have been mostly ignored by the literature. Two primary sets of hypotheses are tested: the first set explores the impact of regional electoral system permissiveness and party size, while the second set assesses the continuity of party strategies from regional to national elections. The study employs multilevel mixed-effect logistic regression models, analyzing these gaps on Belgium, Finland, Germany, Greece, Italy, Norway, Portugal, Spain, Sweden, and Switzerland. Key findings indicate that higher regional electoral thresholds are positively associated with EA participation. Additionally, optimal conditions for EA involvement occur when a party's regional vote share in the previous national election is around 7%, typically few percentage points below the regional mean threshold to win one seat. Past participation in regional EAs also emerges as a significant predictor of future national EA engagement, also when parties previously collaborated with multiple allies. This thesis contributes to the understanding of electoral cooperation in multilevel contexts, highlighting the need to consider regional influences in national election strategies. It addresses gaps in current research and aligns with the call for a more integrated approach in coalition studies, emphasizing the importance of regional nuances in shaping national electoral outcomes.

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1.0 Introduction

Elections, a vital aspect of democratic processes, shape the power dynamics and political direction of nations. Political parties, irrespective of size, aim for electoral success, often leading them to form Electoral Alliances (EAs), defined in this thesis as joint party lists. The decision to form such alliances is influenced by a calculus of benefits, like increased electoral appeal, against potential drawbacks, such as the risk of alienating certain voter groups.

The fundamental goals of political parties, as outlined by Røed (2022), are to garner votes, secure offices, and impact policy. EAs thus emerge as a strategic choice that can significantly influence election results. Notably, in Western Europe, the impact of EAs on the political landscape, despite their importance, has been understudied.

EAs are critical in determining election outcomes. Golder (2006a, 193) illustrates how EAs can shift the balance in an election, especially in scenarios with closely matched party blocs. They also enable smaller parties to surpass electoral thresholds, as noted by Verthé and Deschouwer (2011), influencing parliamentary representation.

Beyond election results, EAs shape various political dimensions, including government formation time (Bäck et al. 2023), government composition (Debus 2009; Strøm, Budge, and Laver 1994; Martin and Stevenson 2001), government longevity (Chiru 2015), and voter behavior (Gschwend and Hooghe 2008; Duch, May, and Armstrong 2010, Gschwend, Meffert, and Stoetzer 2017; Plescia 2017). They also affect party system stability (Casal Bértoa and Enyedi 2021).

Parties are motivated to form EAs when the benefits outweigh the costs (Ibenskas 2015). Factors influencing this decision include party size, the electoral system's proportionality (Verthé and Deschouwer 2011; Hortala-Vallve, Meriläinen, and Tukiainen 2022), and fragmented party systems (Hortala-Vallve, Meriläinen, and Tukiainen 2022). Furthermore, parties tend to continue cooperating in subsequent elections (Ibenskas 2015; Andersen 2020).

However, there is a gap in the literature regarding the regional variation and the influence of subnational levels on national elections, despite some attention by researchers like Spoon and Gómez (2017) and Andersen (2020). The lack of focus on the multilevel electoral systems, a result of methodological nationalism, limits our understanding of the formation and dynamics of EAs. Recognizing regional nuances in national elections is crucial, as highlighted by Albala (2018) in advocating for a more comprehensive approach in coalition studies.

This thesis aims to explore the strategic positioning of parties within multilevel electoral systems, considering how regional election experiences inform national election strategies. This approach acknowledges that while national elections are paramount, they are influenced by regional and potentially European and municipal elections.

In addressing these gaps, the formulated research question is:

How do multilevel electoral systems affect political parties' choice to participate in national elections as part of electoral alliances?

To address the research question, I formulate two sets of hypotheses. The first set (Hypotheses 1-3) focuses on regional differences within national elections, particularly examining how the permissiveness of regional electoral systems–specifically, the threshold to win at least one seat–and party size interact. The second group of hypotheses (4 and 5) delves into the continuity of party strategies from regional to national elections, exploring whether past regional election behaviors, like participating in EAs and the number of alliance partners, influence actions in subsequent national elections within the same region with regards to EA participation.

The analysis centers on political parties as the unit, observing their EA participation in elections across different regions. The key dependent variable is whether a party joined an electoral alliance in national elections or not, while independent variables include the highest electoral threshold for winning a seat in the national parliament from the region (H1 and H3), party size (H2 and H3), previous regional EA participation (H4), and the number of parties in the previous regional election's EA (H5).

Multilevel mixed-effect logistic regression models will be employed to analyze the data, utilizing the Regional Elections dataset (Schakel 2021; Schakel and Verdoes 2023). This dataset, uniquely disaggregated at the regional level for national elections, is pivotal for this study. The geographical focus is on Western Europe, encompassing Belgium, Finland, Germany, Greece, Italy, Norway, Portugal, Spain, Sweden, and Switzerland.

The findings suggest that a higher regional electoral threshold positively correlates with EA participation. Additionally, parties are more inclined to join EAs when their vote share in the previous national election in the same region is about 7%, typically 6 percentage points below the regional threshold. Moreover, past participation in regional EAs is a significant predictor of future EA engagement in national elections, particularly when parties have previously allied with multiple partners regionally.

The thesis is structured as follows: Chapter 2 defines EAs and provides essential theoretical background. Chapter 3 reviews existing literature, identifies the research gap, and introduces five specific hypotheses. Chapter 4 details data preparation and presents the distribution of the dependent variable and country-specific information. Chapter 5 outlines the methodological approach, addressing potential statistical challenges. Chapter 6 presents the analysis and results, examining the relationship between variables and the dependent variable. Finally, Chapter 7 discusses the support for the hypotheses, implications for existing literature, limitations of the findings, and directions for future research.

2.0 Background and conceptualization

The inaugural chapter of this thesis delves into the intricate world of electoral alliances, a realm characterized by diverse institutions and actors, each with unique roles and objectives. To fully comprehend how regional variations and previous regional experiences influence participation in electoral alliances for national elections, it's crucial to understand the political context in which parties operate. This chapter aims to provide a foundational understanding to dispel any initial confusion and lay the groundwork for the subsequent sections of the thesis.

This chapter will cover several key areas to establish this context. First, it will outline how Electoral Alliances (EAs) and Pre-Electoral Coalitions (PECs) have been defined in the literature and how I chose to define these concepts in this thesis; then, it will delve into the role of elections and the goal of political parties to provide a basis of understanding of the context of EA participation. Following this, the concept of a multilevel perspective will be explored, encompassing second-order elections and the idea of methodological nationalism.

2.1 Definitions

Parties collaborate in many ways, both before, under, and after elections. Ibenskas and Bollyer (2018) use the term “inter-party cooperation” as an overarching term, but this includes cooperation both before, under, and after elections. Party cooperation that only relates to elections doesn’t seem to have an overarching term, though, so for this thesis, I will be referring to them as different forms of “electoral cooperation” as a way to highlight the fact that they only relate to elections.

The literature focusing on electoral cooperation usually focuses on joint lists, which I in this thesis refer to as electoral alliances (EAs) and publicly announced agreements of cooperation in government after the election if they were to come in a position to form a government, which I refer to as pre-electoral coalitions (PECs) in this thesis. Golder (2005, 2006a, and 2006b), for example, treats every form of electoral cooperation as one. But most other articles are either focusing on EAs (Ibensaks 2015; Verthé and Deschouwer 2011; Anebo 1997;

Spoon and Gómez 2017; Hortala-Vallve, Meriläinen, and Tukiainen 2022) or PECs (Golder 2005, 2006a and 2006b; Andersen 2020).

However, when it comes to explaining electoral cooperation, does Golder (2006b) provide some useful information: in a simple manner, can electoral coalitions "distinguish between parties that publicly coordinate their campaign strategies at the national level (pre-electoral coalitions) and those that do not (no pre-electoral coalitions)" (Golder 2006b, 21). More precisely, she defines pre-electoral coalitions as a "collection of parties that do not compete independently in an election, either because they publicly agree to coordinate their campaigns, run joint candidates or joint lists, or enter government together following the election" (2006b, 12). And continues to say that two criteria need to be fulfilled: (1) It must be publicly announced, and (2) that its member parties "cannot compete in elections as truly independent entities." For her studies, she also limits them to national elections.

These concepts that are part of electoral coalitions can be lined up in a continuum of electoral coordination, as described by Golder (2006b, 16) and Ibenskas and Bollyer (2018, 454). The beginning of the spectrum would be that the party participates individually; the voting ballot only shows the party at hand on the line in front of the box, where the voter would cross out in order to determine which party they want to vote for. The opposite side of the spectrum would be that the party participated in the election completely together with another or several other political parties as a merger. The different types of electoral cooperation can be placed in between these outliers. Golder (2006b) identifies five types of electoral cooperation, here listed from the most amount to the least amount of coordination: (1) "Nomination Agreements" which is when parties agree to field a single candidate in each district, thereby avoiding competition with each other, (2) "Joint lists" which is when parties create a single list of coalition candidates, (3) "Dual Ballot Instructions" which is when parties instruct their supporters to cast votes in a coordinated manner to ensure both parties in the coalition receive enough votes to meet electoral thresholds or win seats, (4) "Vote Transfer Instructions" which is when parties instruct voters to rank coalition members on their ballots in a particular order to facilitate the transfer of votes and maximize electoral success, and (5) "Public Commitment to Govern Together" which is when parties announce an intention to form a government coalition if they win, and is, as mentioned above, what I refer to as pre-electoral coalitions (PECs).

Both EAs and PECs are pre-election strategies, but they diverge in their objectives and implications. PECs, exemplified by Germany's CSU-CDU alliance, are non-binding verbal agreements that hint at post-election governance intentions. They spring out of a wish to communicate their intentions in the hope of affecting elections and possibly to get a head start in the negotiations after the election. Conversely, EAs, once common among Norway's right-wing parties to counterbalance the Labor Party, is a way to directly affect the results of the election in order to save small parties or secure victory for large parties. But they don't need to have any intention of forming governments together after the election. Despite their differences, literature often lumps EAs and PECs together, potentially due to their connection to elections and the fact that Golder (2005; 2006a; 2006b) conceptually mixed them together in her seminal work on electoral cooperation. I believe that the research field is in great need of a conceptual cleanup so that we can get a clear idea about the differences between EAs, PECs, and other prevalent concepts within the study of electoral cooperation.

2.2 Elections and Political Parties

Elections are central in democracies. They give citizens the power to choose their leaders and hold them accountable. If people aren't happy with how things are going, they can vote for a change. While candidates can run on their own, they often join political parties. These parties represent different groups of people and their views, and they provide a structured way for citizens to be a part of the political process.

Political parties are integral entities in the political landscape, not only in democracies but also in many authoritarian settings. Drawing from Katz's (2017, 208) citation of Huckshorn: "A political party is an autonomous group of citizens oriented towards nominating candidates, competing in elections, and aiming to capture governmental power through securing public offices and orchestrating governmental functions" (Katz 2017, 208). Katz expands on this by emphasizing the nuanced motivations behind such endeavors (Katz 2017, 208). Typically, political parties exhibit four main features: (1) Purpose: Their main aim is to gain control of the government. The reasons can vary, from wanting to make positive changes in society to personal political gain. (2) Method: They achieve this by nominating candidates, participating in elections, and forming governments. (3) Competition: In democracies, they have to compete in elections to gain power. (4) Independence: They should be autonomous (Katz 2017, 208).

The reason parties came into existence is that working together often brings better results than working alone (Katz 2017, 209). They formed around common interests in society to represent those views (Colomer & Puglisi, 2005). Parties have three main goals: influence policy, gain office positions, and get votes (Røed 2022). Seeking office is about getting the perks that come with it, while wanting to influence policy is about shaping public decisions. Most of the time, voting helps them achieve these goals (Strøm & Müller, 1999). In their quest for their goals, they can choose to either operate alone, or together with other parties. However, the choice between cooperation versus individual strategies is connected to an evaluation of the costs and benefits of either choice. Participating in elections together with other parties could have large repercussions if their voter base doesn't like the party they cooperate with. But in some situations the danger of such consequences is deemed to be lower in costs than the potential benefits that cooperation might lead to.

2.3 Multilevel Perspective

In political systems where governance is decentralized across multiple tiers, intricate interactions often emerge between various actors and institutions operating at different governmental levels. Such interactions can profoundly influence how political parties strategize, particularly in forming EAs. And it's an established observation that subnational politics not only differ in characteristics from national politics but that it also can influence the latter. Yet, a tendency in political science has been to sideline this subnational dimension. This neglection of subnational levels and the assumption that nation-state is the natural unit of analysis has been criticized as methodological nationalism (Schakel 2018, 110).

Reif and Schmitt's (1980) second-order election (SOE) model postulates that not all elections are perceived equally in significance by both parties and voters. National executive office elections, with more significant implications, are classified as first-order. In contrast, elections like those for the European Parliament and regional governments, where national executive power isn't directly at stake, are deemed second-order. This separation, however, has been increasingly challenged by the ongoing trend of decentralization since the 1970s (Jeffery and Wincott 2010, 168). As regions gain more importance, it has become even more important to turn our academic eye to the effects of multilevel politics, also in terms of the study of EA participation.

3.0 Literature review and hypotheses

This chapter delves into the existing literature on electoral alliances, starting with a broad overview of coalition literature to contextualize the place of EAs within it. I will briefly discuss the foundational works in the EA literature, highlighting the pivotal contributions and the volume of studies conducted. The focus then narrows to specific independent variables previously identified as influential in EA participation, serving as essential control variables for this research. The latter sections will pinpoint the current gaps in the literature, outlining the unique contributions of this thesis and the rationale for addressing these shortcomings. The chapter concludes with the presentation of the formulated hypotheses based on the reviewed literature and the identified gaps.

Government coalitions is undoubtedly the subject that has received the most attention by scientists within the area of party cooperation. It probably helped that it got a head start. Already in 1960s did Riker (1962) develop his theory of Minimal Winning Coalitions. This approach focused on the formation of coalitions based on seat majority. However, it faced criticisms for its narrow scope and neglect of ideological considerations, among other factors. This has been identified as the first of a total of four generations within the study of coalitions (Albala 2018). The second and third generation built upon Riker's foundation with more nuanced theories like Axelrod's (1970) Closed Minimal Range Theory and Dodd's (1976) emphasis on cleavage conflict, while also incorporating variables like constitutional law, sociology, and political system, and expanding the understanding of coalition lifecycle. The most recent fourth generation of coalition studies offers a vertical and multidimensional approach, acknowledging advanced party behavior and strategy. We've only just begun with this generation's study, according to Albala (2018), and he anticipates that more of these kinds of studies will be conducted soon.

Within the extensive field of coalition literature, does electoral cooperation emerge as a distinct and yet underexplored dimension. Moving away from the traditional post-electoral focus, this niche highlights the dynamics leading up to elections. Although coalition studies have received vast scholarly attention, dedicated research on EAs remains relatively sparse. I have only been able to identify a few publications focusing on EAs in the form of joint lists.

Some researchers touch upon similar topics but doesn't necessarily give a satisfactory and accurate definition of what they study, and the reader is left to guesswork. The studies I have found to study EAs in the form of joint lists, however, is a mixed bunch. There are two qualitative case studies focusing on Belgium (Verthé and Deschouwer 2011) and Ghana (Anebo 1997), and two quantitative studies; one studying on Finland at a subnational level (Hortala-Vallve, Meriläinen and Tukiainen 2022) and one studying Mexico (Spoon and Gómez 2017). Other noteworthy research on EAs are Wyatt (1999), who examines the absence of an electoral alliance in the 1998 Indian election in Uttar Pradesh—a scenario where alliance formation between two parties could have secured their victory. Griebeler and Resende (2021) investigate the motivations of small parties aligning with larger counterparts in EAs, while Blais & Indridason (2007) analyze the constituencies likely to be encompassed within an EA agreement.

However, the general field of electoral cooperation is relatively advanced, particularly when such coalitions are employed as independent variables impacting other political aspects (Debus 2009; Chiru 2015; Strøm, Budge, and Laver 1994; Martin and Stevenson 2001; Gschwend and Hooghe 2008; Duch, May, and Armstrong 2010, Gschwend, Meffert, and Stoetzer 2017; Plescia 2017; Casal Bértoa and Enyedi 2021).

Sona M. Golder was a pioneering figure in electoral alliance and coalition research. Her publications from 2005 and 2006 were the first to delve into the rationale and circumstances under which political parties engage in such alliances. Arguably, Golder's seminal work initiated a surge in electoral cooperation studies. Prior to her contributions, there existed case studies touching upon electoral cooperation by examining how they were affected by electoral system changes (Gunther 1989; Anebo 1997; Di Virgilio 1998; Wyatt 1999; Bartolini, Chiaramonte & D'Alimonte 2004; Gschwend & Leuffen 2005). Earlier still, Duverger (1959) alluded to electoral coalitions and alliances in discussions on coalition typologies. Post-Golder, there emerged what might be termed a 'new wave' of EA research. In the subsequent section, I will delve into some of these studies and explore their findings regarding EA participation.

3.1 Factors affecting EA participation

In this section of the thesis will I identify the most important variables that has been found to affect EA participation. Numerous articles has found effects in multiple countries and systems, but I will first and foremost focus on the studies that are particularly relevant for the focus of this thesis. This means that factors like voter preferences (Invernizzi 2022; Anebo 1997), rewarding partners with cash outs (Hendrawan, Berenschot, and Aspinall 2021), and the financial resources of the party (Silva 2022), won't be focused on. These are important variables that do play a part in EA participation in some countries and systems, but not particularly important for understanding the circumstances in which parties in Western European countries form EAs.

One of the most important predictors of EA participation is ideological proximity. Parties are most likely to cooperate with parties that agree with them, since the opposite could alienate the voter base (Golder 2006a; Ibenskas 2015; Verthé and Deschouwer 2011; Hortala-Vallve, Meriläinen, and Tukiainen 2022; Kellam 2017). However, when facing a common adversary, ideological compatibility may be overlooked (Anebo 1997; Frey, López-Moctezuma, and Montero 2021; Verthé and Deschouwer 2011). Nevertheless, I won't include ideology as a control variable in this thesis because these studies all focus on which parties that are likely to cooperate with each other, whereas my thesis focus on the circumstances a party is more willing to cooperate under, regardless of with whom.

As I have already touched upon, doesn't the literature on electoral cooperation do a very good job of differentiating between cooperation in the form of joint lists, publicly announced intentions of post-election government formation, or other forms of electoral cooperation. Because of this will I treat all studies that focus on any form of electoral cooperation as relevant for this literature review. The rest of the chapter is grouped by the relevant independent variables and I will present the existing literatures findings within each of these variables. The different variables are party and coalition size, party system fragmentation, electoral systems, and previous cooperation. Ideology and party system polarization are also important predictors of EA participation, but not as relevant for this thesis. I include a subchapter discussing how these factors impact, but also why they aren't relevant in this instance.

3.1.1 Party and coalition size

Party and coalition sizes emerge as crucial determinants in EA participation, as underscored by extensive research. A common methodology in electoral cooperation studies involves a dyadic organization of datasets. In this approach, every party in an election is paired with every other, with dyads that engage in actual cooperation being marked as "1" in the dependent variable, and non-cooperative dyads receiving a "0". Such studies predominantly address the questions of with which parties, and under what conditions, a party is most likely to form alliances. When examining party size, these investigations seek to identify patterns of alliance propensities based on size. For instance, Golder (2006a) and Ibenskas (2015) delve into discerning which party sizes are most inclined to forge EAs. Conversely, other studies, such as that by Verthé and Deschower (2011), delve into the critical size thresholds at which parties become predisposed to EA participation. Furthermore, Spoon and Gómez (2017) add depth by assessing how variances in party sizes over consecutive elections shape EA participation.

Ibenskas (2015) underscores the varying incentives for parties of different sizes to engage in EAs. According to his findings, small parties are most inclined to form alliances to ensure they surpass the electoral threshold. These smaller entities also appeal to larger parties, offering them a potential edge to clinch electoral victory without conceding significant gains. Medium-sized parties, on the other hand, often seek alliances with smaller parties to safeguard potential coalition partners. However, collaborations between medium and large parties are less frequent due to the associated higher costs. In a similar fashion, does Verthé and Deschouwer (2011) delve into the reasons for cooperation between small and large parties. Their research aligns with Ibenskas in the sense that large parties form EAs to bolster their prospects of entering office, driven by the incentive to lead municipal government formations. Small parties, facing challenges in maintaining local party enthusiasm when excluded from municipal councils, are determined to secure at least a seat, but not necessarily so much so that they are willing to bypass ideological distance.

Thus far, the party size perspective of Ibenskas (2015) and Verthé and Deschouwer (2017) seem one-dimensional. Spoon and Gómez (2017) adds depth by including factors like party goals and variation in performance across districts. They anchor their insights in the electoral performance of large (PRI) and small (PVEM) parties in Mexican national elections. They pose that the decision to cooperate in elections are intrinsically connected to the goal of the

party, which again depends on the size of the party (Spoon and Gómez 2017, 65). Particular electoral rules in the election in question made it possible for parties to receive votes both alone, and as part of an EA in the same district. This made it possible to evaluate the effect of the variation of each of the factors. The small party was more likely to cooperate in the subsequent election if they performed poorly, showing that they sought survival when they perceived it as necessary. The large party, on the other hand, was more likely to cooperate in a specific district if they performed bad in a district they participated alone, and if they personally performed well when participating together with the small party. This shows that they sought to maximize their winning potential by evaluating their individual popularity in each district and sought help where their popularity vaned.

The conclusion so far is that large parties cooperate to secure victory, and small parties to ensure representation. These parties are shown to cooperate together and seems like the perfect match of two parties that have different goals but won't come in the way of each other in terms of what they want to achieve. However, it's not always the perfect match. Because at some point will the smallest party be so small that it doesn't make an attractive match to the larger party, and in other cases will the party be so large that it doesn't need to cooperate in order to achieve its goals. Golder (2006a) captures this logic when she looks at the effect of coalition size together with the asymmetry. Her findings indicate that if the expected coalition size is large and there is an asymmetric balance of strength between the parties of the dyad, the likelihood of cooperation is low. In such a situation will the dyad consist of one large and one small party, with an increased likelihood that the largest party could win on its own.

The role of subnational electoral arenas in influencing national elections has been largely understudied in the realm of electoral cooperation. However, Spoon and Gomez (2017) notably address this dimension, posing that a prior increase in the vote share for the PRI-PVEM alliance in a gubernatorial election enhances the likelihood of these parties forming an electoral alliance in subsequent national elections within the same district. This positive relationship suggests that collaborative success at the subnational level, as manifested by a growth in vote share, can act as an indicator of cooperation in national elections. Similarly, Andersen (2020) asserts that a party's increased size in a preceding regional election boosts its appeal, as it becomes better positioned to govern both regionally and nationally. Notably, the significance of this effect is only marginal.

3.1.2 Party system fragmentation

In elections with a singular party, there are inherently no contenders, nullifying the need for an electoral alliance. Similarly, in a two-party system, alliances are not feasible since the only potential partners are direct competitors. Consequently, the presence of more than two parties in an electoral contest introduces the potential for cooperative strategies. Hortala-Vallve, Meriläinen, and Tukiainen (2022) examines both EA participation and its ramifications on facets such as voting behavior and other electoral results. They claim that an increased number of parties in an election enhances the likelihood for EA participation. This inclination is not solely attributed to a reduction in available seats per party, but rather to politicians' intent to provide clearer coalition signals to the electorate post-election. In their analysis, which encompasses 1914 observations at the municipality-election year level, the metric for size is denoted by the number of contesting parties in a municipality. While the number of parties doesn't directly equate to party size, a higher count implies intensified competition for the same seats. Utilizing an OLS model, with the dependent variable indicating the formation of an EA by at least two parties, they found a positive effect: an additional party in a contest corresponded to a 7 to 9% rise in the likelihood of an EA being formed at the municipality level.

Conversely, Golder (2005) studies EA participation using the dyadic approach. She measures party system fragmentation through the effective number of parties, which controls for instances where one party significantly outweighs the others in size. Golder's findings doesn't support the claim that more parties in the election increases the likelihood of EA participation. However, when paired when paired with an interaction term accounting for disproportionality–defined as the effective threshold–there's a discernible impact.

3.1.3 Electoral system

The nature of an electoral system inherently influences the strategic choices of parties. Predominant electoral systems, particularly the open-list proportional representation system employing the D'Hondt method, often provide a bias in favor of larger parties during seat allocation (Benoit 2000). A consensus within the literature on EAs and PECs is that disproportionality plays a pivotal role in fostering cooperation. Golder (2006a) operationalizes disproportionality via the effective electoral threshold, an average of the thresholds of representation and exclusion, which factors in district magnitude, legal

thresholds, and upper-tier seats. This threshold quantifies the fraction of votes ensuring a party's parliamentary representation with a probability of at least 50 percent (Boix 1999, 614), essentially denoting the vote share required for a party to secure a seat. Golder's analysis suggests a direct relationship between increased disproportionality and the propensity for EA participation.

Subsequent research introduces nuanced perspectives. Hortala-Vallve, Meriläinen, and Tukiainen (2022) posit that parties within more disproportional electoral systems exhibit heightened incentives for PEC participation. However, this relationship diminishes in elections with a profusion of contesting parties. Their approach, rooted in municipal elections, employs the modified Gallagher index to gauge disproportionality, capturing the disparity between parties' vote and seat percentages. Verthé and Deschouwer (2011) attest to the role of disproportionality, measured via the effective electoral threshold, in enhancing electoral collaboration. Yet, they note that oversized parties, often beneficiaries of such systems, encounter diminished cooperation incentives, given their capability to clinch victories independently. Supporting this, Golder (2005) identifies the significant positive interaction between the effective threshold and party system fragmentation, especially pronounced in the presence of numerous parties. Thus, it seems evident that electoral systems shapes party strategies, with disproportionality influencing cooperative tendencies.

3.1.4 Previous cooperation

Parties that have previously participated in EAs are more inclined to do so in subsequent elections, likely due to reduced costs and voter familiarity with such arrangements. Ibenskas (2015) notes that prior cooperation between parties is a strong predictor of future EA participation, emphasizing the decreased negotiation costs from reusing or building upon prior agreements. The focus lays on the previous cooperation with the same party, and that building upon this connection lessens the costs of EA participation. Andersen (2020) builds upon this perspective, and stresses the significance of previous successful cooperation, which not only builds trust among party members but also establishes a sense of familiarity for voters. This familiarity not only impacts voter perception but also provides parties with insights into voter reactions to past alliances, influencing future cooperation decisions. Andersen's research (2020) indicates that parties emerging from an EA are more inclined to collaborate with others. However, the propensity for re-establishing an EA with a prior

partner is even higher. Spoon and Gómez (2017) further highlight the influence of past electoral cooperation at subnational levels. The intricacies of these mechanisms are explored above in the subchapter of the impact of party and coalition size.

This review of the literature on the topic of EA participation has revealed that parties cooperate when they are too small to be sure to win seats on their own, large, but not large enough to be certain of victory individually, and if parties participated together in the elections prior, this enhances their chances of cooperating in the next election. In terms of circumstances that increases the likelihood of participation, does the literature indicate that disproportional electoral systems and fragmented party systems, both positively increases the likelihood of EA participation.

3.2 The gap in the literature

Electoral cooperation in form of electoral alliances and pre-electoral coalitions significantly influences government composition, individual voter behavior, the evolution of party systems, and democratic processes overall. It is therefore important to understand how political parties use them. While the field has matured considerably over the past two decades, there remain salient gaps in our comprehension. A recurrent theme in the literature is the weight of previous electoral cooperation as a determinant for subsequent collaborations. Ibenskas (2015) emphasizes its role as a chief predictor, corroborated by Andersen (2020) who observes that parties recently exiting an alliance are predisposed to further inter-party coordination.

One evolving area of study is the impact of subnational arenas on these dynamics. Albala (2018) stresses the importance of subnational elections as experimental platforms for parties, urging the scholarly community to delve deeper. Indeed, as decentralization has increased significantly in EU and OECD nations (Jeffery & Wincott, 2010), the importance of regional elections have increased. Nevertheless, current literature on this part of the subject such as the works of Spoon & Gómez (2017) and Andersen (2020) predominantly focus on countries like Mexico, India, and Central and Eastern Europe. This highlights a clear lacuna: a comprehensive cross-national study examining Western Europe, especially regarding the interplay between regional and national elections and their implications for electoral alliances. Further underlining the significance of this interrelation, Albala and Reniu (2018)

forecast it as pivotal for future coalition research. Albala's second assumption from "The Missing Piece: Introducing the 4th Generation of Coalition Theories" specifically underscores the role of the subnational domain as a "Learning and Experimental Field."

Surprisingly, there's an absence of research that focus on the multilevel perspective of EA participation on a larger scale than one case. It is likely to be due to methodological nationalism, and the result is that we have sparse knowledge about how parties strategically engage in EAs in multilevel electoral systems. We know next to nothing about the regional variation in the factors that has been found to affect EA participation, moreover, we know lack knowledge about the interplay between regional and national election in terms of the behavior of parties.

To address these shortcomings, my research aims to: (1) Demonstrate the important implications of regional variation in national elections on electoral alliance participation, and to (2) illustrate how regional electoral alliances can spill over into national electoral dynamics. As a bonus, this will provide a large-scale cross-national examination of existing theories within the literature of electoral cooperation for electoral alliances in the form of joint lists in Western European countries.

The necessity to bridge these gaps derives from the concept of methodological nationalism. By ignoring regional effects, especially given the rising trend in regional science, our understanding of electoral cooperation mechanisms has become skewed. Recognizing the implications of regional nuances on national elections therefore is imperative. Conclusively, this research aligns with and seeks to address the anticipations articulated by Albala (2018) for the upcoming trajectory of coalition studies. How I intend to follow up on this and fill the identified gaps, will be outlined in the next subchapter where I will present my hypotheses and reasoning behind them.

3.3.Hypotheses

The aim of this subchapter is to form hypotheses that are grounded in the existing literature on the topic of electoral alliances, but also expand our knowledge of the phenomenon with relevant and important contributions. The goal of this thesis is to challenge the existing literature on the topic which have been conducted in a methodological nationalistic manner. I

do this by studying EAs in a multilevel perspective, and my goal is to explore how regional variation and past regional experiences affect how parties participates as EAs in national elections. My hypotheses explore the strategic decisions of parties based on regional dynamics and past experiences, delving into the conditions that make EAs attractive and feasible.

The hypotheses are divided into two parts. The first emphasize the dynamics related to regional variation in the popularity of political parties and the variation in electoral systems within regions in national elections, and how political parties use EAs in order to navigate these systems. The second part concern spillover of EA participation from regional to national election. There are in total five hypotheses, and these will be explored in the passages below.

Regional variation hypotheses

The higher the electoral threshold is in an election, the harder will it be for smaller parties to surpass it. What has been less explored in this logic is the variability across regions. Regions within a country can have different numbers of parliamentary seats available, which directly impacts the number of votes needed to surpass the electoral threshold. In regions with a limited number of seats, the competition for each seat intensifies. The heightened difficulty of securing a seat individually in such scenarios increases the attractiveness of forming EAs. In essence, the greater the challenge of winning a seat alone, the more appealing and strategic it becomes for parties to enter into alliances.

Conversely, in regions where a larger number of seats are available, the competition per seat diminishes, making it easier for parties to win seats independently. This dynamic leads to a straightforward but critical logic: Fewer seats in a region imply a higher effective threshold for securing representation, compelling parties to consider EAs as a viable strategy to ensure at least one seat. The more challenging it is to succeed alone, the higher the likelihood of cooperation among parties. Therefore I hypothesize that:

H1: parties participate as part of EAs more often in regions with a higher electoral threshold of entering the national parliament from the region.

The same way electoral systems may vary, can a political party's popularity vary across regions. Political representatives usually are elected to the parliament through electoral processes at some form of a subnational level. The people in these subnational territories elect the parties and representatives that they believe will represent their wishes in the best way possible. Consequently will some parties be more popular in some territories than in others. Conservative parties, for example, is typically more popular in rural areas of a country. Like CDU and CSU in Germany who are most popular among the conservative and rural population, while The Green party is much more popular in urban areas. Parties that aim to win as many seats across the country as possible is more likely to do so in the regions they are the weakest. In the regions they already are popular, they will have much more to lose if they choose to cooperate. Cooperation will bring in another party that the voters might not be as satisfied with, and it might just as well have negative consequences as positive. But in regions the party has little popularity, they have less to lose because they already aren't that well liked. Cooperation with another and more popular party might help them out and make them more liked among the voters through association (like PODEMOS). They also will have a larger incentive to form EAs because if they are see that they are in a situation where they might not win a seat in a region their incentive to form an EA in this region increases. Along the same lines of the literature, should parties also participate as part of EAs in regions where they have an opponent that is equally large as them but they want to beat in order to secure their victory.

H2: parties participate as part of EAs more often in regions where they are small and large but not too large.

I argue that regional variation in party size is dependent on the threshold of winning one seat in the region, especially so for the smaller parties. This is because smaller parties are interested in representation, and when the threshold of making that goal come true increases, it becomes harder for them to do it on their own and the likelihood for EA participation increases. The regional variation of threshold have important repercussions on the strategic choices of parties to form EAs at different levels of party size. Consider a situation of one party, aiming to win as many seats in the country as possible. If it were to have 10% vote share in every region, it will be facing a completely different challenge in a smaller region, where only four parliamentary seats is available and the threshold to win one seat is 25%, than in a larger region where maybe as many as 30 seats are available and the threshold is

3.33%. Given that the number of parties in both regions are the same, the more intense competition in the smaller region heightens the incentive for the party to consider EA participation. For larger parties that are interested in winning over a potential opponent of similar size, there will be less incentive to participate in as part of an EA because a higher threshold means that there are fewer seat in the region and the benefits will be lower.

H3: The effect of party size on EA participation is modulated by the threshold of the region, making small parties more likely to participate as EAs and large parties less likely.

Regional spillover hypotheses

The regional electoral arena is perceived as a laboratory for political experimentation. National party branches can leverage the regional variations and previously established electoral alliances (EAs) to devise strategies for national elections. Research suggests that prior experience in forming EAs can lower the costs and uncertainties associated with future collaborations because the parties form relations, trust, and procedures (Ibenskas 2015; Andersen 2020; Spoon and Gómez 2017).

I argue that EA participation not only should be affected by previous cooperation in national elections, but also in regional elections. The regional branch of a political party is the same party, even though it is likely to be run by different people in the region than on a statewide level. But decisions and strategies of at the regional level still isn't likely to be completely disconnected to the national level, especially not from the national party's branch in the same region. What happens in the regional election is therefore likely to affect the behavior of the party in the national election in some way or another. And the party's strategy in regional elections is more likely to differ from the regional arena because the regional arena often can be perceived as less important and is more likely to be used as an arena for experimentation (Albala 2018). The political landscape is also likely to be different at the regional level, other subjects can be important to the voters, and parties that are unlikely to cooperate at the national level, can still be forming EAs or other forms of coalitions together. By participating in EAs in regional elections, parties may deepen their understanding of the intricacies involved in EA participation and they may learn more about the reactions of their voters.

There should be an effect of previous cooperation in regional elections on EA participation in national elections simply because different political levels do affect each other. Since the

existing literature have shown that previous cooperation does influence the propensity of future cooperation strategies, is it easy to conclude that cooperation in regional elections should spill over into national elections.

H4: The experience of participating as part of EAs in regional elections increases the likelihood of national EA participation.

In addition to the proficiency the party builds through the experience of EA participation in regional elections, are the parties likely to build relations and connections to the parties they are participating in EAs with. When they already have formed an EA with one party will it in many cases build trust between the parties and bonds between the people involved. They are also likely to build specific procedures related to EA participation which will ease the process in future cooperating projects. If a party not just participated in an EA with one party in the previous regional election, but two or more, it is more likely that this party is easy to cooperate with for other parties and it might also indicate that the party is ideologically flexible. This, in addition to that it will have built relations to several parties, will make the party as an attractive party to have in an EA for other parties. The latter because the party can work as a networker and help bring in even more parties. This logic builds upon Andersen (2020) who finds that the more parties that are allied with the same partners, the more likely the parties are to form a pre-electoral coalition. All of these factors make it likely that the more parties the party cooperated with in the previous regional election the more likely is it to form an EA again in the next national election.

H5: Cooperating with more parties in the previous regional election increases the likelihood of national EA participation.

These hypotheses will be tested through quantitative models on Western European countries that have regional variation in EA participation. The models are run by using the Regional Elections dataset (Schakel 2021) which have been further coded in order to facilitate for a study of EA participation. The next parts of the thesis will show this dataset and how it has been coded. Then the variables used in the models are explained in addition to how they have been coded. Lastly the analyses and their results will be shown and discussed.

4.0 Data and measurement

This chapter presents the data used in the analysis and the extensive coding that has been performed in order to make the dataset ready to be used for exploring the hypotheses. I begin by presenting the dataset I started out with, then I explain the coding that I have done in order to make sure that all the EAs in the respective countries are included and I follow up by showing how the data looks like after this coding. Next, I will explain how I have coded each of the variables used in the analysis and why they have been coded this way.

What sets this study apart from other research on EA participation is the use of a dataset with national and regional elections results disaggregated at the regional level, which is made possible by the Regional Elections datasets (Schakel 2021; Schakel and Verdoes 2023). The datasets include election results from regional and national elections disaggregated at the regional level. By using this dataset, however, I am limited to the countries available in the dataset. There are more countries available, but the most extensive list of countries with a geographical similar origin is Western Europe, a region which also lacks thorough cross-national studies that explains EA participation. Therefore, Western Europe both is a theoretically interesting region to explore while it is the region with the best data availability, making it a natural region of focus in this thesis. The Regional Elections dataset consist of 15 Western European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdoms.

I include ten of these countries. Austria, Denmark, and Netherlands are excluded because there were no EAs in national elections in these countries. France has been excluded because of several reasons. Firstly, they have two rounds, and the alliances may change from the first to the second round, which could be an issue to use in a reasonable manner. Secondly, parties may participate differently in each district. With several hundred districts, there would be a lot to keep track of, especially since these EAs often have labels that doesn't represent the parties within the EAs. In addition, there is very limited information about the parties in these EAs and the election results. All in all, it would be very time consuming to make a reliable dataset with France. The United Kingdom has been excluded because of their unique electoral system in the European context with the utilization of the First Past The Post

system. The voters cast their ballots on individual candidates and only one candidate is elected from each constituency. Each candidate will represent one party, and while they might form alliances, but that would be between candidates and not parties, and not of interest to me in this thesis. Finland is a special case with only have one region present, which is Åland. This is because Åland is the only region with a directly elected parliament, and its party system is totally different from the mainland Finland. However, there are many EAs in Åland, and this give the impression that there are many parties participating as part of EAs in Finland in general, although this does not reflect the full picture of EAs in the country. The next subchapter will delve into how this dataset have been coded in order to make it ready for analyzing EA participation in national elections.

4.1 Coding Electoral Alliances

In this section, I will explain how I have coded the Regional Elections dataset in order to make it ready for analyzing EA participation in national elections. This has been done through meticulous work following set guidelines making sure that the result is as reliable as possible. This, however, was not a simple undertaking. One of the reasons EA participation have received such a sparse focus by political scientists is in fact that they can be so arduous to record correctly (Golder 2006b). The crux of the issue lies in the intricacies of data collection, which involves navigating varied and sometimes inconsistent record-keeping practices over time. Nevertheless, this task is much easier when the concept of focus is joint lists compared to the orally agreed agreements of pre-electoral coalitions, where the scientist often rely on media coverage, which can be hard to get ahold of when we go back to the middled of the 1900th century, especially for small parties in small regions all across Western Europe.

I had an advantage, of course, by starting out with recorded election data from the Regional Elections dataset (Schakel 2021; Schakel and Verdoes 2023). The dataset did record electoral alliances to a degree, but since the focus originally wasn't on EA participation, the electoral alliances was distributed, so to say, to the largest party in each of the EAs. By this I mean that only the largest party was retained with the votes of the EA and the smaller parties was excluded but there was a dummy variable that indicated that the largest party did get those votes by being part of an EA. Consequently, in order to be able to explain when and where

political parties participates as part of EAs in national elections I needed to identify the smaller parties that had been excluded.

I sat out to research this by going back to the original source of each election in the dataset for each of the EAs in the dataset. However, I quickly realized that the dataset had failed to recognize several EAs, and by further investigation I saw that many parties that were coded as individual parties either participated as part of an EA or was in fact an EA in itself. I realized that there were too many that was wrongly coded that I could trust that the most EAs had been identified in the dataset, as a result, I came to the conclusion that I would have to look through every election in every region and make sure that every EA and their parties was correctly identified as such.

The coding process for the Regional Elections dataset was undertaken with two primary objectives. The first goal was to identify the smaller parties within Electoral Alliances (EAs) that were already coded in the dataset but had their minor parties excluded. The second aim was to uncover other EAs that participated in elections but were not previously recognized as such in the dataset. This endeavor required an extensive review of 3366 national and 1530 regional elections across 226 regions in 10 countries. Official election data from each country, supplemented by notes from the creators of the Regional Elections dataset (Schakel 2021; Schakel and Verdoes 2023), served as the primary resources for identifying EAs.

To ensure the accuracy and reliability of the coding, I established specific rules. Typically, EAs were identifiable in many countries by parties listed together on the ballot, often separated by hyphens. This method, however, was not universally applicable. In some instances, such as in Switzerland, parties could participate individually and as part of an EA within the same electoral district. Additionally, in several cases, EA listings were not standardized, and some EAs had unique names requiring dedicated research for proper identification.

The coding process necessitated a detailed examination of each case, acknowledging the variations in practices across different countries, regions, and time periods. The challenge was more pronounced for earlier periods, where online data availability was limited, especially for smaller parties. My approach in these instances involved comprehensive

research, including the study of party histories and relevant information available on multilingual Wikipedia pages.

Before beginning the coding for each country, I familiarized myself with the common EAs and major political parties in that country. This preliminary research was crucial for efficient and accurate coding. Initially, the process was slow as I meticulously verified each party's involvement in an EA. However, as familiarity with the parties and EAs increased, the process became more streamlined.

In cases of uncertainty, I referred to official election sources for additional information on parties and EAs. When official data was insufficient, I relied on alternative sources like Wikipedia, party websites, and media coverage, although this was not ideal due to potential inaccuracies and biases. My approach was to code parties as EAs only when supported by reliable sources, ensuring neutrality, and minimizing errors. This research was time-consuming and required a meticulous evaluation of every party in every election. Cases of doubt were thoroughly documented, with references to sources supporting or opposing their classification as EAs. Table 4.1 provides a summary of the main issues and challenges encountered during the coding process, illustrating the complexities and nuances of this extensive task.

Table 4.1: Challenges encountering when coding EAs

Overarching Issue	Detailed Description	Example
A merger or an EA?	Some EAs consist of parties that election after election over a long period of time. Discerning if these should be determined as EAs or not was challenging.	IU in Spain was in particular hard to discern. I landed on it being an EA since the parties in it varies a lot over the years which indicates that it isn't a set group of parties.
Party mergers and EAs	Some political parties, after participating in EAs, eventually merge into a single entity. It can be hard to determine exactly when the EA becomes a merger.	FS and Ob in Finland, who eventually merge.
Individual party or an EA	In some instances, what is assumed to be a political party might actually be the name of the EA itself.	FDP in Italy, ÅS in Finland, and "Biancofiore" in Italy with CCD and CDU.
Vague information and multiple parties in EAs	Some EAs consist of multiple parties. And in some cases it can be hard to identify all of them. Especially the smallest ones.	FDP in Italy: The official election source didn't provide any information of the parties in the EA, while different online sources indicated different parties.
Name changes	Some entities might have undergone name changes over time which cause confusion and an issue with naming and tracking EAs and parties across election types (national and regional) and over time.	IU in Spain which seems to have been called IUCA between 1989 and 2011.
Different party names per region	Some parties use a distinct name in each region they participate in, and the name of this party appears together with the country-wide name separated by a hyphen making it look like they are in an EA, but in reality are not.	PSOE in Spain operates this way: They are called PSOE-A in Andalusia, PSC-PSOE in Catalonia, and PSPV-PSOE in Valencia.
Unclear regional participation	In some cases it is indicated that EAs are present, but not which regions they participate in and not.	Several joint lists in Norway in 1945 which had to be excluded because of this.

4.1.1 Merging

The dataset preparation for this thesis was a meticulous process that began with the coding of parties' involvement in Electoral Alliances (EAs) in both national and regional elections. This initial step was critical in creating a foundation for the comprehensive dataset needed to test

the hypotheses. The goal was not only to identify parties within EAs but also to capture the complete electoral landscape, including instances when parties opted not to participate in EAs. To achieve a complete picture, it was necessary to merge the EA-specific data with the full Regional Elections dataset (Schakel 2021). This dataset initially coded EAs in a manner that attributed votes only to the largest party within the alliance, omitting smaller parties.

During the merge, I faced the challenge of eliminating duplicate entries resulting from the inclusion of EA-participating parties in the original dataset. This was resolved by matching vote counts and ensuring the consistency of party names across datasets, which was essential for accurate longitudinal tracking of party behavior across elections. The merged dataset provided a rich landscape of 64,897 observations from national elections and 28,397 from regional elections (when including all of the countries in the Regional Elections dataset), organized within the framework of election years, regions, and countries. The subsequent step involved linking the datasets to reflect the continuity of party sizes from previous national elections and the spillover from preceding regional elections into the current national election cycle.

For the analysis of Hypotheses 4 and 5, which assess the spillover effects from regional to national elections, I refined the dataset through strategic merging. This was also necessary in order to make the size variable and the previous national EA participation control variable. This involved collating data to track the participation of each party across sequential elections and horizontally integrating this information, thus expanding the dataset. Data from prior national and regional elections were linked to each party's current election profile. Instances of non-participation in previous elections, which are critical to the analysis, were initially marked with NAs and later adjusted to zeros. This step was essential to distinguish parties' continuous engagement from their absence in the electoral process and to analyze the impact of previous participation on current EA strategies. This meticulous merging process ensured the dataset could support a robust examination of the factors influencing EA participation in national contexts. The resulting dataset had 41997 observations and the unit of analysis is political parties in elections within regions and years. This particular unit of analysis was chosen in order to be able to explore when parties chose to participate as part of EAs.

4.3 Country specific information

Now that I have explained how the dataset have been coded, will I describe what it looks like to give a thorough understanding of what kind of dataset that has been used for the analyses. First I will provide information about each country with information about the number of elections in both national and regional elections, and other crucial pieces of information about when the regional elections were introduced in each of the countries.

During the coding I found out that some countries had variation in EA participation within the national elections and that some did not. This is where the idea to look for regional variation came from. Since regional variation in national elections is part of the focus of the thesis, the countries with this kind of variation naturally has become the focus, even though countries without this kind of variation also has been retained. As seen in Table 4.2 are the only countries that has been retained in the dataset that does not have regional variation in EA participation are Finland, due to it only being one region from the country in the dataset, and Greece. It should be noted that regional variation does not only take place in the sense of threshold and varying party sizes in each region, but there are also variations in the number of regions in each country. Table 4.2 indicates that this kind of variation is particularly present in Switzerland, where the number of regions seems to change from election to election in some cases and have varied between 22 and 26, and in Sweden where it have steadily dropped from 31 to 21. Which also can be noted from Table 4.2 does the number of elections in each country vary a lot which makes the dataset slightly unbalanced, in that sense.

Table 4.2: Country information from national elections in the used dataset.

Country	Years	Number of regions	Elections	Avg. num. of EAs per election	Regional EA variation
Belgium	1946-2019	4	92	0.804	Yes
Finland	1948-2019	1 (Åland)	20	2.1	No (only present in Åland, but Åland is the only region present from Finland in the dataset)
Germany	1949-2017	9 (1949-1953); 10 (1957-1987); 16 (1990-2017)	236	0.001	Yes, but there are only two parties in EAs in total
Greece	1981-2019	49 (1981-2009); 13 (2012-2019)	604	0.517	No
Italy	1948-2018	20 (1948-1996); 21 (2001-2018)	365	2.1	Yes
Norway	1945-2017	20 (1945-1969); 19 (1973-2017)	368	0.443	Yes
Portugal	1976-2019	20	300	0.563	Yes
Spain	1977-2019	19	285	2.428	Yes
Sweden	1944-2018	31 (1944-1960); 29 (1964); 28 (1968); 26 (1970-1994); 21 (1998-2018)	603	0.136	Yes
Switzerland	1943-2019	22 (1963, 1967); 23 (1951, 1955); 24 (1943, 1947, 1969, 1971); 25 (1975, 1979, 1987, 1999, 2007); 26 (1991, 1995, 2003, 2003, 2011-2019)	493	0.012	Yes

Table 4.3 provides information about the regional elections that has been retained in the dataset. It includes information about which regional election years that are included which is essential in understanding what kind of effect regional elections can have on national elections in terms of EA participation.

Table 4.3: Country information from regional elections in the used dataset.

Country	Years	Number of elections	Number of EAs	Avg. num. of EAs per election
Belgium	1974-2014	27	27	1
Finland	-	0	0	0
Germany	1946-2016	180	2	0.01
Greece	1994-2014	222	236	1.063
Italy	1947-2017	220	91	0.414
Norway	1975-2015	154	10	0.065
Portugal	1976-2015	10	27	2.7
Spain	1980-2018	175	262	1.497
Sweden	1946-2014	212	2	0.009
Switzerland	1945-2018	328	148	0.451

Note: Since a regional election only is included if one of the parties in the election also participated in the subsequent national election in the same region, some regional elections are not present in the dataset. Table 4.3 displays information about the regional elections that are present in the dataset. Unlike table 4.2, does not Table 4.3 include the number of regions in each country by years, because this varies each year depending on whether or not a party participated in a national election in the same region after a regional election.

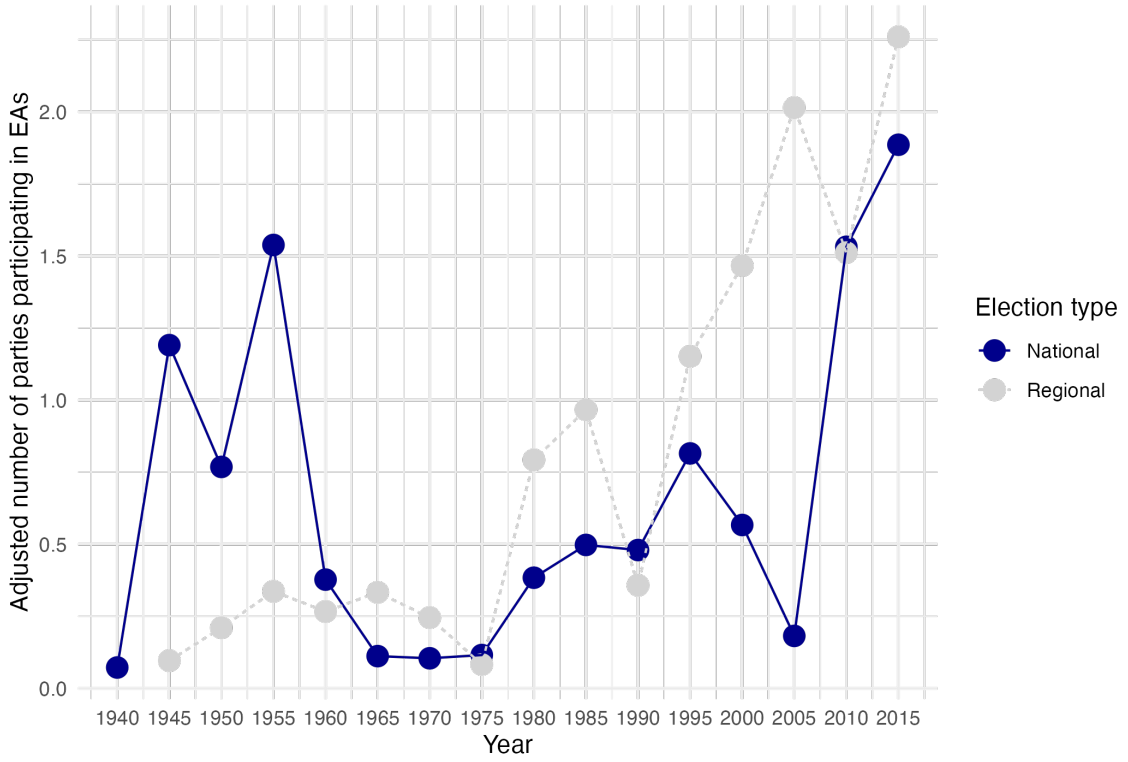
The subsequent analysis will delve into the trends of Electoral Alliance (EA) participation across time and countries, building on the data presented in Tables 4.2 and 4.3 which outline

the average number of parties in each election. The focus will be on interpreting two graphs that illustrate these trends in both regional and national elections.

The forthcoming figures in this section will depict the participation of parties in EAs over the years, segmented by election type and country. This is crucial as the thesis, while primarily centered on national elections, also includes hypotheses related to the influence of previous regional EA participation. Understanding regional election trends is thus essential for a comprehensive analysis. Figure 4.1 presents the number of parties involved in EAs at five-year intervals from 1943 to 2019. To account for the varying number of elections within each period, the figure adjusts the count of EA-participating parties by the number of elections, thereby reflecting the average number of parties per EA for each five-year span.

The data is aggregated at the regional level, meaning that if an EA participated across multiple regions in a single national election, each regional participation is counted separately. For example, a five-party EA in Greece's 1956 national election, spread across 41 regions, results in 205 entries for that election year. The darker line in the graph traces the trajectory of national elections, while the lighter line corresponds to regional elections. A pronounced upward trend in regional EA participation emerges from 1980 onwards, with noticeable declines around 1990 and 2010. This increase may be attributed to the growing prevalence of regional elections. National elections also display an upward trend, with significant drops in the early 2000s and a notable high during 1945-1955. The latter can be partially explained by instances like Greece's 1956 election, but a more granular exploration is available in the country-specific analyses provided in subsequent graphs. Overall, there appears to be a persistent rise in the number of parties participating as part of EAs since the 1970s, with the trend being more pronounced in regional elections.

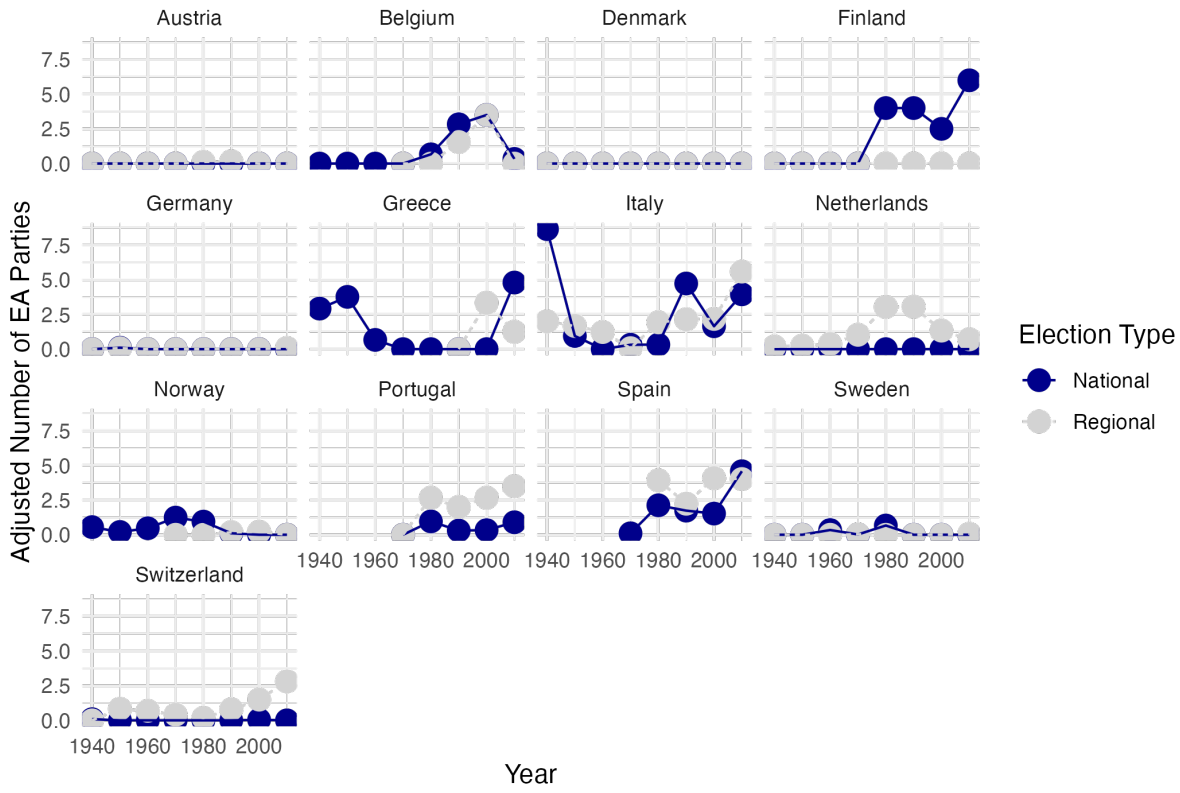
Figure 4.1: Number of parties participating as part of EAs per five-year period adjusted for the number of elections



Note: Includes all of Regional Elections Western European countries (excluding UK and France) in order to get a general grasp of EAs in Western Europe.

To further understand what is going on in Figure 4.1 I have included Figure 4.2 which depicts the trends both in national and regional elections over time in each country. The number of EAs are also here adjusted by the number of elections. Austria, Netherlands, and Denmark are also included to show their variation. As we can see, does Netherlands in fact have EAs, but only in regional elections. In Figure 4.2 is the data points grouped at ten-year-intervals, contrary to the five-year-grouping in Figure 4.1

Figure 4.2: Parties participating as part of EAs per ten years by country, adjusted for the number of elections



Note: Includes all of Regional Elections Western European countries (excluding UK and France) in order to get a general grasp of EAs in Western Europe.

By looking at graph 4.2 we can say that the upwards trend in the number of parties participating as part of EAs both in national and regional elections in the recent decades seems to stem from many countries. The rise in the 40s and 50s in national elections, as seen in Figure 4.1, seems to mostly stem from Greece and Italy. In national elections, the trend in recent years, smees to emerge from Belgium, Finland, Greece, Spain, and Italy. In regional elections there is a lot of the same countries making out the trend, but Finland does not have any EAs in regional elections. Norway and Sweden had some parties participating as part of EAs in the middle of the 20th century, but it seems to have stopped before reaching the 2000s. Due to the leap from regional to national elections, with less seats available in total across the country, will several parties experience that it is harder to get representation in national elections. This makes EA participation a natural choice, making it natural to think that there should be more EAs per election in national elections than in regional elections. But there are no clear trends, neither in Figure 4.1 or 4.2 that indicates clear evidence for this. Some

countries have more parties participating as part of EAs in regional elections and some countries have more parties participating as part of EAs in national elections.

Understanding the prevalence of Electoral Alliances (EAs) in different countries, such as Italy, Spain, and Greece, compared to countries with fewer EAs, requires a deep dive into the context in which these parties operate. Historical and traditional factors significantly influence EA formation. The underlying reasons often tie back to the specifics of electoral systems and laws. For example, certain vote-to-seat conversion methods may benefit larger parties (Benoit 2000), prompting smaller parties to seek cooperation. Additionally, electoral laws play a crucial role. A notable instance is Norway, where post-WWII right-wing parties formed alliances to counterbalance the dominant Labor Party. This trend of EA participation was prevalent until 1989 when the introduction of adjustment seats altered the incentives for forming EAs by compensating smaller parties that were previously disadvantaged. Conversely, Italy saw a surge in EAs following electoral reforms before the 1996 general elections.

Having outlined the observable trends in EA participation across various Western European nations, the stage is set to delve deeper into the choices made in order to prepare the dataset for modelling. The upcoming section will detail how the variables of the dataset have been prepared for the analysis.

4.4 Variables

The upcoming chapter will articulate the variables used in this thesis and the rationale behind their coding. The dataset structure allows for comparative analysis of party performance across consecutive national elections to gauge party size and examines the preceding regional election to assess the spillover effect of Electoral Alliance (EA) participation. Instances where a party did not partake in the previous regional or national election are coded as zero. This coding reflects a focus on the impact of active participation in previous EAs, rather than mere participation in prior elections.

However, this decision has implications. The prevalence of non-participation leads to an imbalance in the dichotomous variables related to EA participation, with a preponderance of zeros over ones. This is evidenced in Figures 4.3, 4.6, and 4.8, and similarly for variables like

party size and previous regional EA party count, as displayed in Figures 4.5 and 4.7. The highest electoral threshold variable shows a slight right skew, although less pronounced than the EA-related variables (refer to Figure 4.4). The effective number of parties (ENP) variable also leans left, whereas the time variable is marginally left-skewed.

This uneven distribution of the variables could potentially be problematic because one of the assumptions of a statistical model is that the variables are normally distributed (Osborne 2013, 171). In order to deal with this, it is normal to transform the variables, either by taking the square root or the natural logarithm of the variable. Taking the square root of the variable, however, might create undesirable results, and logarithm transformation could be considered the natural alternative (Osborne 2013, 173-174). I apply the strategy of log transformation to particularly skewed variables where it statistically makes sense. The year variable and the effective number of parties, for example, are slightly skewed (see Figure 4.9 and 4.10), but since the variables is naturally linear in their nature, it does not make sense to transform them. It would only make it more difficult to interpret them.

Log transformation, however, cannot be performed on values that is 0 or less, and values between 0-1 is treated differently than others. Therefore, it is normal to add a constant of 1 to the variables with values below 1 before transforming (Osborne 2013, 174). The variables I found a reason to transform are highest threshold, party size, and regional EA party count. Since party size had values at 0 I added a constant of 1 to variable before logarithmically transforming them with the base of 10, which was used in order to ensure easier interpretability.

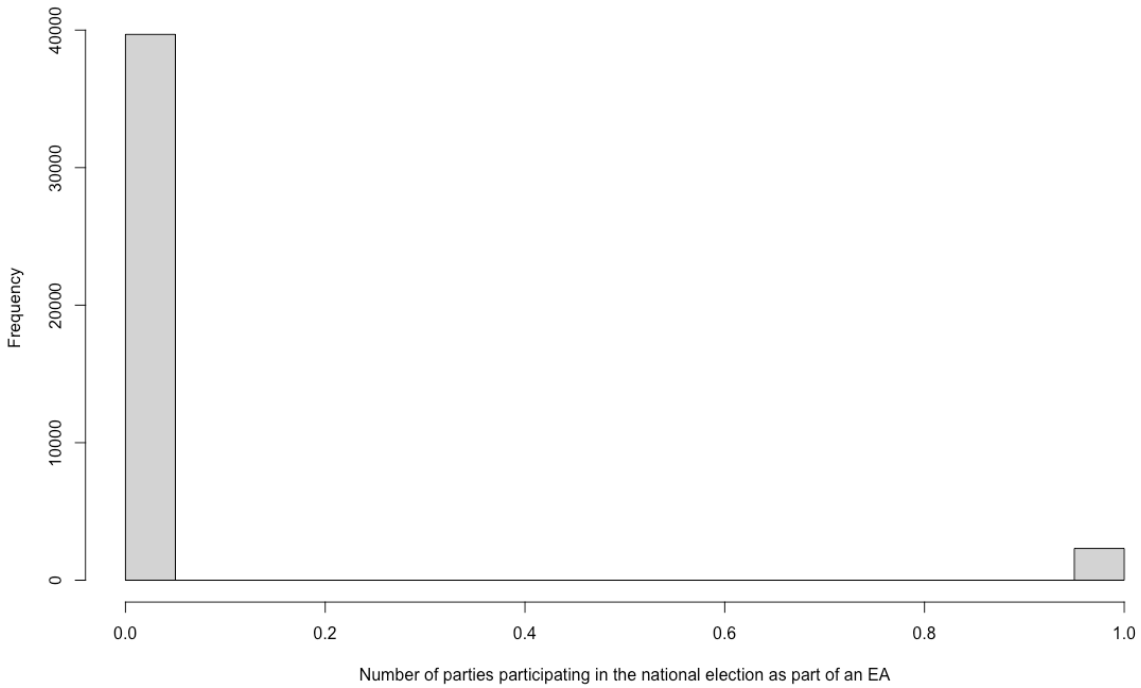
Each variable's coding and the reasoning behind it will be detailed in the following section, complemented by graphical representations of their distributions. The variables discussed include EA participation in national elections (dependent variable)
Independent variables: Highest electoral threshold (independent variable and control variable), party size (independent variable and control variable), regional EA participation (independent variable), and regional EA party count (independent variable), previous EA participation (control variable), effective number of parties (ENP) (control variable), and the election year (control variable). This detailed examination aims to provide clarity on the measurement choices made and to set the stage for the nuanced analysis that follows. Histograms of the variation within the variables are provided along the way, while a complete

overview of the variables before and after transformation is provided at the end of the subchapter in Table 4.6 and 4.7.

4.4.1 Dependent variable

There are many ways in which I could have operationalized the dependent variable. A normal method in the EA literature is to use dyads. Here, every possible combination of two parties are the unit of analysis, and the dependent variable is coded as 1 when the parties in the dyads actually did form an EA in that election (Golder 2005; Golder 2006a; Golder 2006b; Ibenskas 2015). The dyad approach is good at explaining with witch parties a party is likely to participate with, even though it is slightly limited, since the dyads only consist of pairs of parties, and not all the parties in the actual EA. The dyadic approach is less suited in explaining which circumstances that drives the parties to choose to participate as EAs in the first place. The dyadic approach examine the likelihood for two parties to participate in an election together as an EA. But I argue that parties participate as EAs first and foremost because it is a strategic choice that makes them gain an advantage in an election. In such a perspective it would not make much sense to use an operationalization that focus on evaluating the factors that made the party more or less likely to participate as an EA with specific parties. In order to circumvent the bias of the dyadic approach, I have chosen to treat each party in the election as a single entity where the focus is on whether or not that party chose to participate as part of an EA or not. Therefore, the dependent variable is a dichotomous variable where a “0” indicates that the party participated alone in the national election, and a “1” indicates that the party participated as part of an EA. Taking a look at Table 4.6 and 4.7, together with Figure 4.3 is it evident that there are a lot more values at 0 than at 1. Which also is reflected by the mean value of 0.055.

Figure 4.3 : Distribution of the dependent variable (EA participation in national elections)



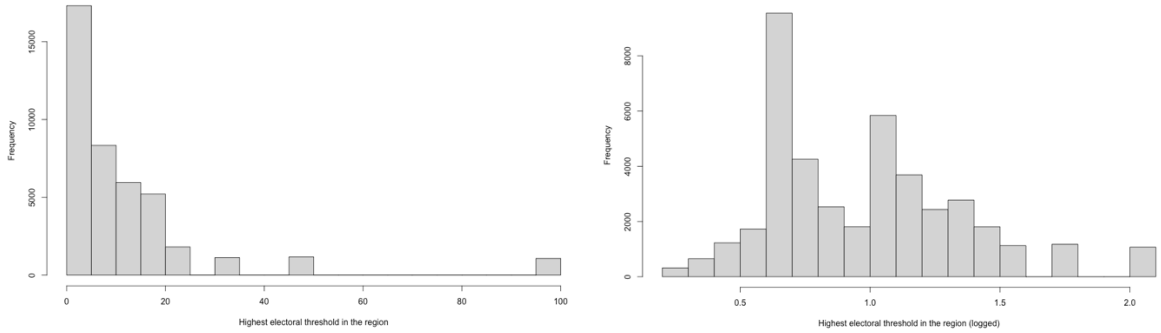
4.4.2 Independent variables

I use four different independent variables. The first two are related to regional variation in electoral systems and party size. H1, which focus on the permissiveness of the electoral system in terms electoral threshold of winning one seat in the region, use *highest electoral threshold,* while H2 expects parties to participate as EAs in regions where they are weaker, and the variable used to test it is called *party size*. The second part of the hypotheses are related to how the behavior of parties in regional elections may spill over into national elections. H4 use a variable called *regional EA participation,* and tests whether a party that participated in a regional election as part of an EA is more likely to participate as an EA in the subsequent national election in the same region. The last independent variable is closely related to H4, but H5 however, focus on whether the likelihood to form an EA in the subsequent national election is enhanced by an increased number of parties in the EA in the previous regional election, and the variable name is *previous regional EA party count.*

Highest electoral threshold is supposed to reflect how hard it is to win a seat in the national parliament from the region. It is measured as the percentage of the votes necessary to win at least one of the regions' seats in the national parliament. When there are 100 seats in the

region, the electoral threshold of winning one seat is 1%, when there are 4 seats it is at 25%. It therefore reflects how many percent of the votes that are necessary to win in order to win at least one seat. Since the elections I focus on are national elections, the national electoral threshold will stop a party from getting a seat, even though it has more votes than what should be necessary to win a seat in the region. The variable therefore indicates the value of the national electoral threshold when it is higher than the threshold of winning a seat in the region. Since the threshold used is the highest of the two, I therefore use the name: highest electoral threshold. As detailed above have the variable been log transformed. The original distribution and the transformed distribution can be seen in Figure 4.3 and it clearly indicates that the transformed variable is much more normally distributed.

Figure 4.4: Distribution of the highest threshold variable in its original (left) and transformed version (right).



For Hypothesis 2, the key independent variable under scrutiny is party size, operationalized as the percentage of votes a party garnered in the prior national election within the same region. In cases where a party did not contest the preceding national election in the region, its party size is recorded as zero. This coding decision presents challenges, especially when accounting for EAs, whose vote shares need to be apportioned among member parties.

The approach adopted for vote distribution within EAs was to allocate shares equally among all member parties. This method avoids the biases that might arise from distributing votes based on the number of seats won, which could misrepresent parties within an EA that did not secure any seats. Although the equal distribution method may artificially inflate the apparent size of smaller parties in EAs with larger counterparts and vice versa, it could provide a more neutral result than other more subjective allocation strategies.

Using vote share percentage as a measure of party size offers a comparative perspective, reflecting a party's relative size against other contenders and the regional electoral threshold. This is crucial because absolute vote counts do not adequately represent a party's competitive stance or its likelihood of securing a seat in the subsequent election, which is the essence of this variable.

In the statistical models, party size is considered both in its original form and as a squared term to examine non-linear effects, with the squaring being performed within the model itself. Originally, the party size variable spans from 0% to 99%, but after a logarithmic transformation with a base of 10 (to which a constant of 1 was added to accommodate zero values), it ranges from 0 to 2. Figure 4.5 illustrates the impact of this log transformation. Values greater than zero become more normally distributed post-transformation. However, a significant number of parties are positioned at the zero mark, indicating no participation in the previous national election within the region. This is further corroborated by Table 4.6, which reveals that nearly half of the parties had no prior engagement in the regional national election, leading to a recorded party size of zero.

Figure 4.5: Distribution of the party size variable in its original (left) and transformed version (right).

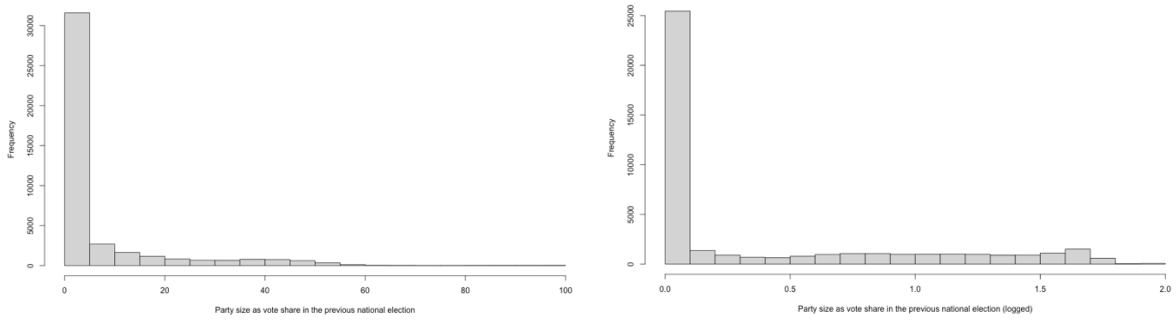


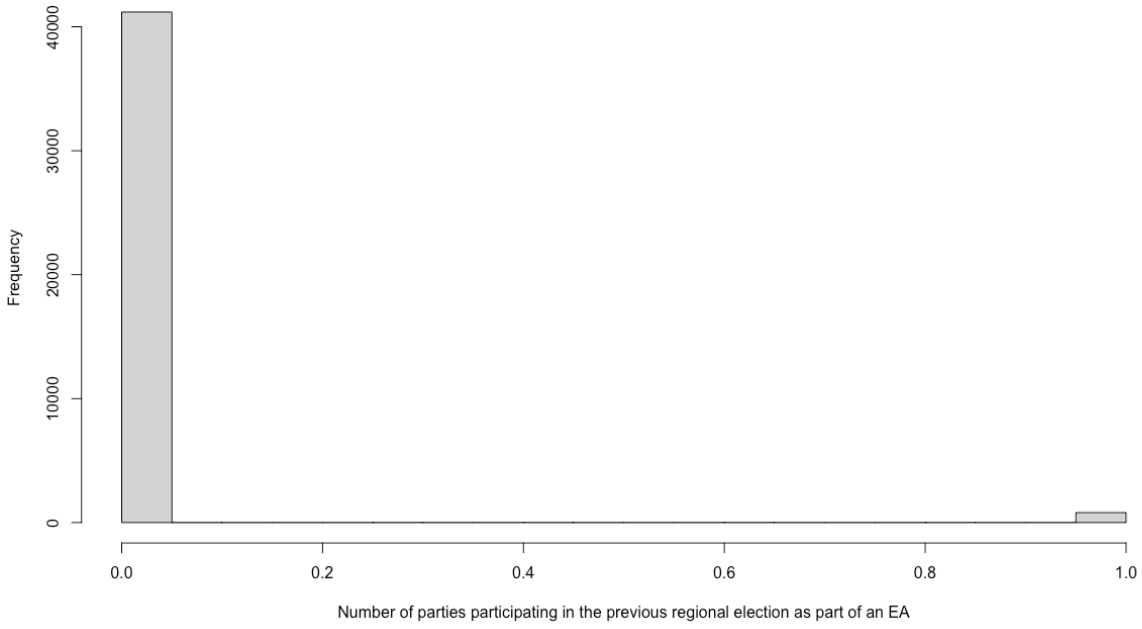
Table 4.4: Distribution of parties between EA participation and party size at zero or above

	Party size at zero (0) vote share or above (1)		
EA participation in national elections in the region	Tot: 41997	0	1
	0	18608 (44.31%)	21080 (50.19%)
	1	1778 (4.23%)	531 (1.26%)

Note: Party size is shown as a dummy where parties that didn't participate in the previous national election in the region have been coded as 0, while parties with a vote share above 0 has been coded as 1.

For Hypothesis 4, the independent variable examined is a party's participation in an Electoral Alliance (EA) during the previous regional election within the same region. This variable is binary, taking on a value of 0 or 1. A value of 1 indicates that the party was part of an EA in the preceding regional election, while a value of 0 is assigned in two scenarios: either the party did not participate in the previous regional election at all, or it did participate but not within the framework of an EA. This coding approach allows for a comprehensive analysis of the variable's impact. By including instances of non-participation in the previous regional elections, the analysis captures the full extent of the variable's influence on the likelihood of EA participation in subsequent national elections. Exclusively focusing on cases where parties participated in regional elections could lead to a skewed understanding of the variable's effects. The distribution of this dichotomous variable is depicted in Figure 4.6, which visually represents the proportion of parties that participated in EAs against those that did not, either through non-participation or independent participation in the previous regional election. This allows for a clearer interpretation of the variable's role in influencing party behavior in national elections.

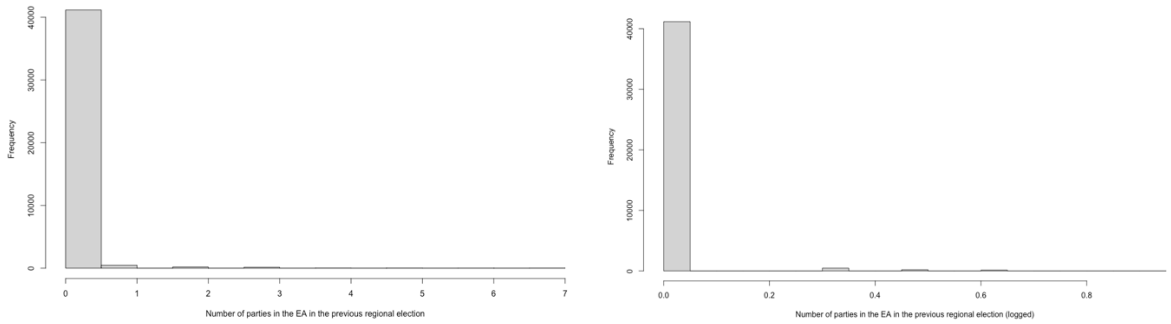
Figure 4.6: Distribution of the previous regional EA participation variable.



For Hypothesis 5, the independent variable is the count of parties in an EA in the previous regional election, contingent upon the party's involvement in an EA. This variable adopts a value of "0" for parties that were not part of an EA in the preceding regional election. Conversely, if a party was indeed part of an EA, the variable reflects the total number of unique parties in the alliance, ranging from a minimum of 1 to a maximum of 7. This means that a party could have allied with up to 7 distinct parties in the prior regional election.

To address the skewed nature of the data, with most observations concentrated at the zero mark, a logarithmic transformation has been applied to this variable. This transformation helps in normalizing the distribution of the variable, making it more suitable for statistical analysis. The effect of this transformation on the distribution is illustrated in Figure 4.7. The left side of the figure shows the original distribution, where a large number of observations cluster at zero, indicating no EA participation. The right side of the figure presents the distribution post-transformation, where the data points are more evenly spread, thereby facilitating a more nuanced analysis of the impact of the size of the EA on subsequent election strategies.

Figure 4.7: Distribution of the number of parties in the EA in the previous regional election variable in its original (left) and transformed version (right).



4.4.3 Control variables

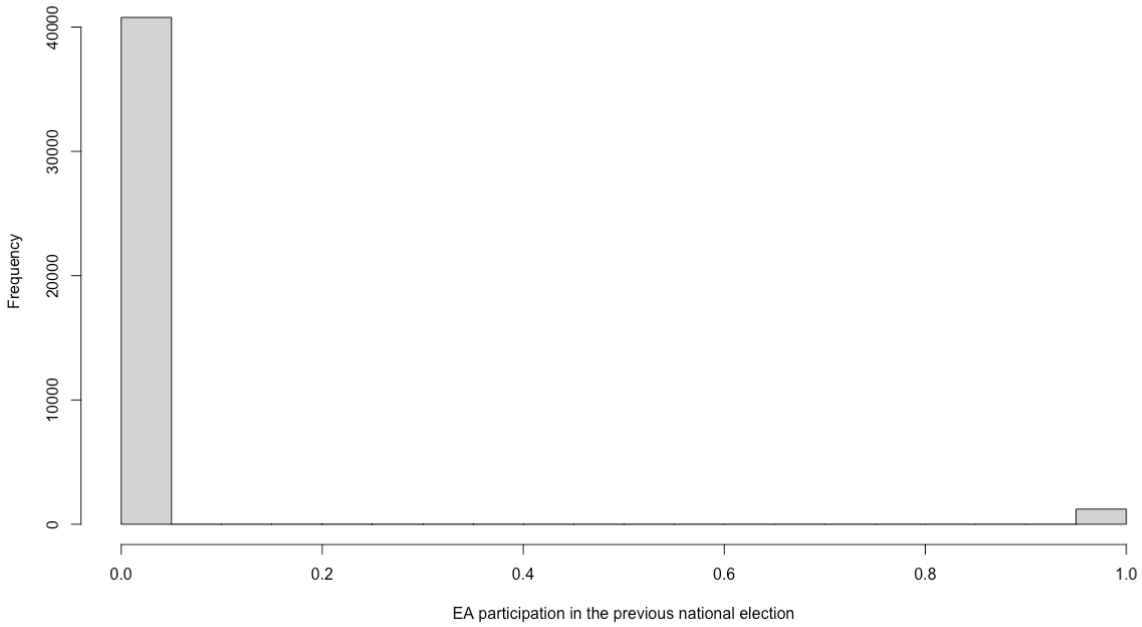
Control variables play a crucial role in multivariate regression analysis. They help isolate the true effect of the primary independent variables by accounting for other factors that could potentially influence the observed outcomes. As Midtbø (2016, 33) notes, including relevant control variables is key to ensuring the validity of the findings and eliminating confounding influences. Based on the literature review, several factors have been identified as influential

in EA participation. These include party size, party system fragmentation, the disproportionality of the electoral system, and previous cooperation. This section will detail the coding and operationalization of the control variables addressing these factors.

In Hypotheses 1, 3, and 3, where party size and the highest electoral threshold are not the primary independent variables, they are instead utilized as control variables. The coding of these variables follows the same method as previously described and will not be reiterated here. They are included to account for the effects of party size and the disproportionality of the electoral system on EA participation.

The control variable for *previous EA participation* is a dichotomous measure indicating whether a party participated in the last national election within the same region. It controls for previous cooperation in national elections. Its operationalization mirrors that of regional EA participation, where a value of 0 represents non-participation. This coding approach results in a high frequency of zeros, as depicted in Figure 4.8.

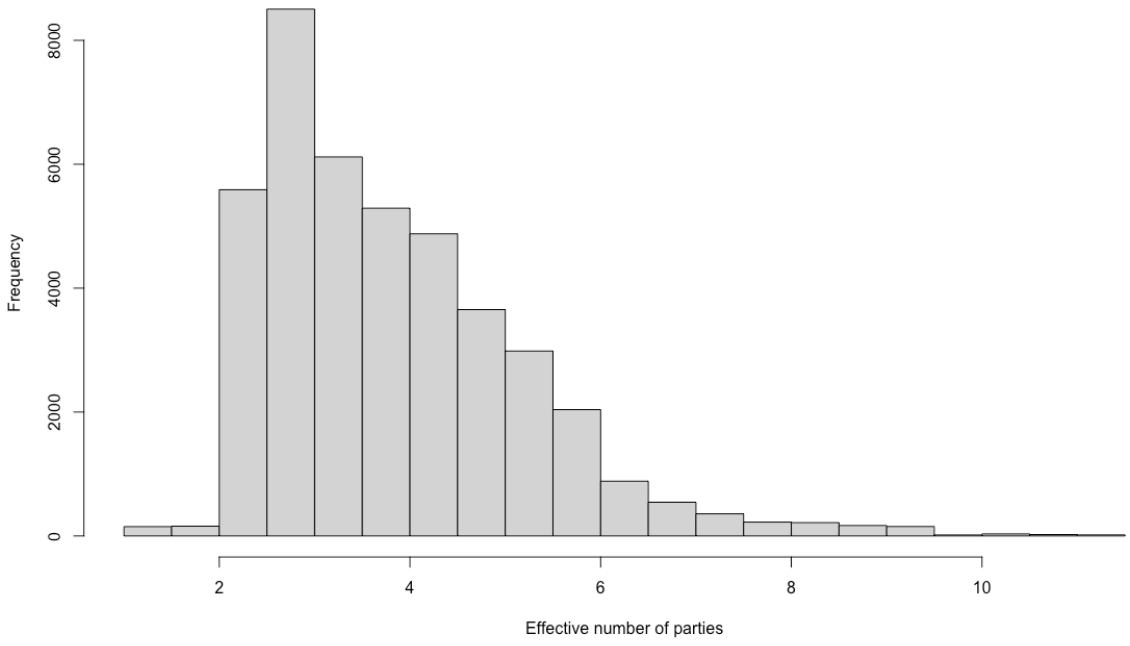
Figure 4.8: Distribution of the previous national EA participation variable.



The *effective number of parties* (ENP) variable is employed as a control to account for party system fragmentation in regional elections. ENP is a crucial measure because it provides a

nuanced understanding of the competitive landscape within a given election. Rather than simply counting the number of parties, ENP weighs their relative sizes, offering a more accurate reflection of the political diversity and competitiveness within an electoral region. It essentially measures the degree of political fragmentation, indicating whether an election is dominated by a few large parties or characterized by a more evenly distributed multiparty system. In terms of its distribution within the dataset, the ENP variable shows a slight skew to the side, as illustrated in Figure 4.9. However, this skewness is not significant enough to warrant a transformation. The variable ranges between 1 to 11.239. By including ENP as a control variable, the analysis can adjust for the varying levels of party competition across regions, ensuring that the effects of other independent variables on EA participation are not confounded by differences in the number of effective parties.

Figure 4.9: Distribution of the effective number of parties (ENP) variable.



Including the year of the election as a variable is essential for accounting for temporal trends in electoral behavior, which we can see is present in Figure 4.3 and 4.4. I account for this through a variable indicating the year of the election. It varies between 1943 and 2019.

Figure 4.10: Distribution of the time variable.

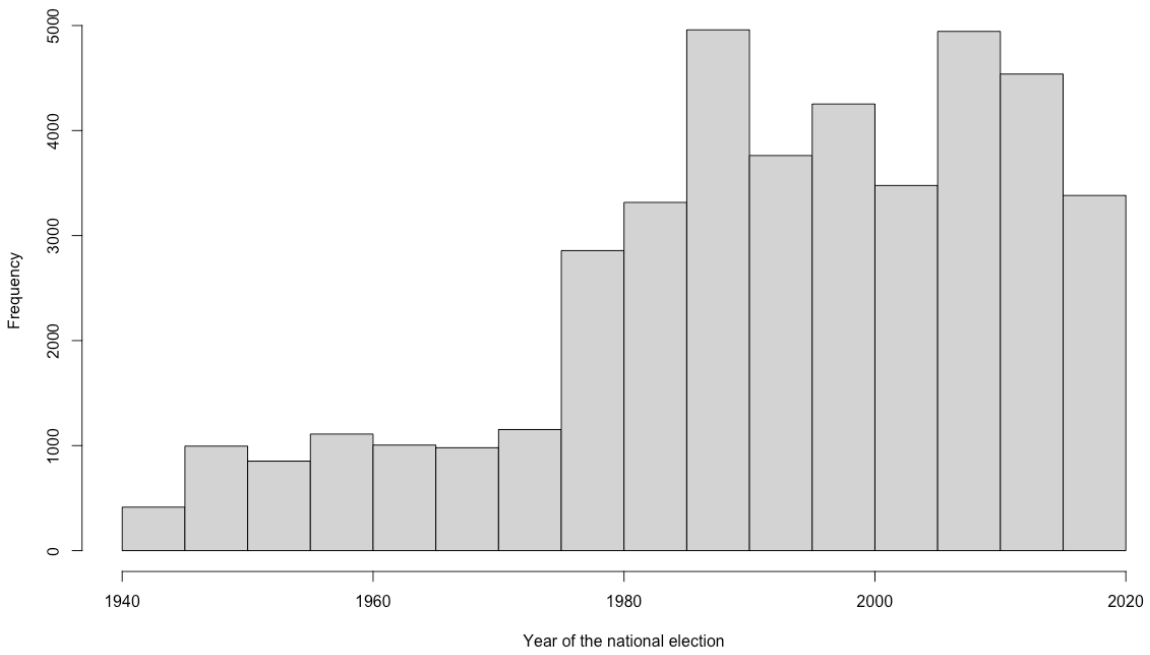


Table 4.5 and Table 4.6 displays the range of the variables before and after the transformation, respectively.

4.4.4 Variable overview

Table 4.5: Descriptive summary with the original variation of the variables

Variables	N	Mean	St. Dev.	Min	Max
EA participation in national elections	41,997	0.055	0.228	0	1
Highest electoral threshold	41,997	12.919	17.265	0.909	100
Party size	41,997	6.107	12.769	0	98.951
Regional EA participation	41,997	0.019	0.137	0	1
Regional EA party count	41,997	0.034	0.280	0	7
Previous EA participation	41,997	0.029	0.168	0	1
Effective number of parties	41,997	3.833	1.362	1	11.239
Year of the election	41,997	1,992.865	18.511	1,943	2,019

Table 4.6: Descriptive summary with log-transformation variables

Variables	N	Mean	St. Dev.	Min	Max
EA participation in national elections	41,997	0.055	0.228	0	1
Highest electoral threshold (logged)	41,997	0.963	0.366	0.281	2.004
Party size (logged)	41,997	0.386	0.565	0	2
Regional EA participation	41,997	0.019	0.137	0	1
Regional EA party count (logged)	41,997	0.008	0.060	0	0.903
Previous EA participation	41,997	0.029	0.168	0	1
Effective number of parties	41,997	3.833	1.362	1	11.239
Year of the election	41,997	1,992.865	18.511	1,943	2,019

Having detailed the coding process of the dataset, its composition, and the measurement of key variables, the next section of the thesis shifts focus to the methodological framework underpinning the models used to test the hypotheses. This section will outline the statistical techniques and tests employed to ensure the reliability and validity of the models.

5.0 Methodological approach

In the previous chapter, I extensively coded the Regional Elections dataset (Schakel, 2021; Schakel & Verdoes, 2023) to ensure the inclusion of every electoral alliance (EA) in the dataset. This chapter explains the methodology I adopted to test my hypotheses. My analytical approach involves a quantitative research design, aimed at uncovering the factors influencing parties' decisions to participate in national elections as part of EAs. This involves examining the regional variability of electoral system permissiveness and party size, and the impact of regional election outcomes on national election strategies. To delve deeper into these dynamics, I will employ multilevel logistic regression models, utilizing the lme4 package in R (Bates et al., 2014). This chapter will address key methodological challenges related to the dataset, including its multilevel structure and clustering, heteroscedasticity, autocorrelation, and multicollinearity, and how I have accounted for these in my analytical approach.

5.1 Multilevel mixed-effects logistic regression models

In selecting an analytical method, a deep understanding of both the data and the objectives of the models is crucial. The nature of the phenomenon under investigation, including its measurement – whether it is continuous or binary – plays a key role in this decision. While linear regression assumes a continuous dependent variable, logistic regression is more suitable when the variable has distinct, binary outcomes (Sommet & Morselli 2017, 204). As detailed in Chapter 4, the dependent variable in my study, party participation in EAs, is dichotomous (0 or 1). This dichotomy makes logistic regression the appropriate choice.

Beyond the nature of the dependent variable, the structure of the dataset is also a essential to take into consideration. Ignoring a dataset’s multi-layered structure could lead to underestimated standard errors and overlooked correlations within each data level (Finch, Bolin, & Kelley 2019, 29). My dataset is inherently multilevel, with parties nested within elections, which in turn are nested within regions and countries. And this is the reason why I choose to use a multilevel mixed-effects model. These models excels at accommodating the data's hierarchical structure, which is achieved by allowing the model’s intercept to vary across each level, thus acknowledging and adjusting for the dependencies within the data

(Sommet & Morselli 2017, 203). This is possible because mixed-effects models both have a fixed and random parameters. Fixed effects represent the consistent and specific impact of categorical variables. They are used when the levels of these variables are of direct interest and are considered consistent across different samples (Bates 2010, 2). However, unlike fixed effect parameters that have specific values estimated directly from the data, random effect parameters represent the variances associated with the random variability across levels of a grouping factor. The units within these groups may have some unobservable heterogeneity among themselves, and adding these groups as random effects will capture these effects and control for it (Gomes 2022, 1). Observations may be interdependent in more ways than by clusters. In models with data that varies over time observations at one time might be dependent of observations at other points in time (Christophersen 2018, 77). It is likely that the EA participation of a party is dependent of their participation in the previous election, but I control for this through the variable that measures if the party participated in the previous election as an EA. I also control for the year of each election which also should help to control for autocorrelation.

Logistic regression models needs to be interpreted in their own way. In linear regression coefficients represent the estimated change in the dependent variables for a one-unit change in the predictor variable (Midtbø 2016, 73). In logistic regression, however, the coefficient represent the odds that an event will happen in comparison to not happen when the predictor variable change by one unit (Sommet & Morselli 2017, 205). In order to make the coefficients in logistic regression models easier to interpret, I use marginal effects, which is a common strategy. Marginal effects in the context of binary independent variables measure discrete change. This means they assess how predicted probabilities change as the binary independent variable switches from 0 to 1. For continuous variables, marginal effects gauge the instantaneous rate of change (Williams 2020, 1). It does not directly report the probability change in the dependent variable, but rather how sensitive the probability of the dependent variable to take place, the probability of EA participation in this case, is to changes in the independent variable at the specified values, and it therefore indicate how steep the derivative is at set points of the independent variable.

One of the issues with multilevel models is measuring how well the model accounts for the variation of the data, which usually is measured with explained variation. This is problematic in multilevel models because of multiple variance components. The most common measure

of explained variance in multilevel models is R^2 (LaHuis et al. 2014). Two other estimates that are widely used are Akaike's Information Criterion (AIC) and the Schwarz's Bayesian Information Criterion (BIC) (Christophersen 2018, 112). AIC and BIC are both used for model selection but differ in their approach and underlying assumptions. AIC seeks to balance model fit with parsimony, operating under the assumption that no single "true model" exists, thereby favoring models that best approximate reality. BIC on the other hand, assumes that a true model exists, and applies a stricter penalty for model complexity and larger sample sizes. Together, AIC and BIC, provides a great way to evaluate the fit of different models (Hallquist 2021).

5.2 Clustering

My data have four levels: Political parties are the level 1 units, elections are level-2 units, regions are level 3 units, while countries are level 4 units. Since the unit of analysis is parties and the focus of the study is how they behave in a multilevel electoral system, elections immediately stands out as an important clustering group. This is because every party is operating within an election, and each election will have their own characteristics. In one election there might be a focus on climate change and culture in another. In some elections there will be a high turnout and in others there will be a low turnout. There will be circumstances affecting each and every election that we don't know about, and each party within each election will be more similar to each other because of similar circumstances and systems, and it is crucial to account for this similarity between parties. Similarly, do I expect there to be some degree of homogeneity of parties within each region because each region within a country have their own characteristics. For example, can there be a large variation of the interests of voters and parties in regions that are where the capital is and regions far away from the capital, and regions with different languages, like Catalonia in Spain, are likely to have other dynamics than other regions. There is also likely to be some kind of homogeneity in countries as well, but I believe that there is more important to use countries as fixed effects. This is because each country will have their own rules and laws regarding EAs and the regional variation in EA participation. Some will allow it and some won't. I have tried to access this information but have not succeeded to find it for every country, and especially not for every election year of every country. By adding countries as fixed effects, however, will I be able to account for these differences.

The degree of homogeneity of the outcome within each cluster can be quantified with the Intraclass Correlation Coefficient (ICC). ICC ranges from 0-1, where 0 means that the residuals within the cluster are perfectly independent of each other, while an ICC of 1 means that there is perfect interdependence of residuals within clusters, and that every unit within the group is fully similar (Sommet and Morselli 2017, 212). Building an empty model where only the dependent variable and the clusters are present, allows me to evaluate if there is reason to include the clusters specified above.

Table 5.1: Estimates for clustering with an empty model

	Elections	***Elections and regions***	**Elections, regions, and countries**
	Coefficient (Std.Err.)	***Coefficient (Std.Err.)***	***Coefficient (Std.Err.)***
Intercept	-8.447*** (0.202)	-6.389*** (0.237)	-8.690*** (0.400)
Model fit.			
AIC	*13256.997*	*13205.860*	*13146.030*
BIC	*13274.288*	*13231.796*	*13180.611*
Pseudo R^2 (total)	*0.922*	*0.768*	*0.779*
Random effects			
N (elections)	*3366*	*3366*	*3366*
N (regions)		*226*	*226*
N (countries)			*10*
ICC (elections)	*0.922*	*0.360*	*0.256*
ICC (regions)		*0.408*	*0.201*
ICC (countries)			*0.322*

Table 5.1 indicate that the model with only elections as the cluster has the highest R^2 and ICC, but the model has the lowest fit. The model with both elections, regions, and countries as clusters have the best fit and the every cluster has a fair amount of ICC which may indicate that it would be appropriate to use all levels as clusters. However, one should not use more levels than the theory indicates that is necessary (Sommet and Morselli 2017, 121), and as explained above, do I find more theoretical reason to include countries as fixed effects than random effects. I have run a robustness tests with countries as a cluster to make sure that it doesn't significantly alter the findings of my model. See Table C2 in the appendix, which mostly confirms this.

5.3 Multicollinearity

A crucial methodological issue one needs to check for when running regression models is multicollinearity. Multicollinearity refers to a situation in regression analysis where two or more explanatory variables are highly correlated, making it challenging to distinguish their individual effects on the dependent variable. When explanatory variables overlap significantly in what they explain about the dependent variable, the slope coefficients become hard to interpret, and their estimated values might appear arbitrary (Midtbø 2016, 112). A widely used measure of multicollinearity is the Variance Inflation Factor (VIF). VIF is calculated for each independent variable in the model. It is defined as the reciprocal of the tolerance, which is the proportion of variance of an independent variable that is not explained by the other independent variables in the model. The higher the VIF score, the higher likelihood of multicollinearity. There is no clear rule on how high the VIF score of a variable has to be for there to be an issue with multicollinearity in the model, but some say that it can be as high as 10 while others argue that it shouldn't be higher than 4 (O'Brien 2007). Interaction effects naturally increases the VIF score of variables in the interaction term because interaction effects introduces another fixed effects parameter with both variables in the interaction term. Correlation plots may also give an indication of problematically high correlation between variables in a dataset. These vary between 0 and 1, where 1 indicate that they correlate perfectly. Table 5.2 test for multicollinearity while Table A1 in the appendix test for correlation.

Table 5.2: Multicollinearity through VIF scores

	Table(model)			
Variables	**Table 6.1, Full model A**	**Table 6.5, Full model B**	**Table 6.5, Full model A**	**Every variable**
Highest electoral threshold	1.950835	1.953432	1.953444	1.953463
Party size	5.653216	5.671398	5.671222	5.671494
Highest threshold * Party size	6.892621	6.899507	6.899258	6.899507
Regional EA participation		1.026265		27.403193
Regional EA party count			1.026077	27.398169
Previous national EA participation	1.029054	1.043423	1.042900	1.043423
Effective number of parties	1.118362	1.119656	1.119311	1.120195
Year of the national election	1.086937	1.091411	1.091711	1.091733

There seems to be some degree of collinearity between the highest threshold and party size, but this is normal when an interaction term is included. The last column in Table 5.2 shows that there really only is multicollinearity between party's EA participation in the previous regional election and number of EA partners in the EA in the previous regional election. Because of this I include two full models where I include one and exclude the other (see Table 6.5).

5.4 Heteroscedasticity

In the realm of statistical analysis, a fundamental assumption underpinning many parametric procedures is that of homoscedasticity–that is, the constancy of variance across the spectrum of an observed variable. This assumption posits that the spread or dispersion of a variable does not systematically vary as a function of its magnitude (Osbourne, 2013, p. 171). Conversely, the phenomenon of heteroscedasticity arises when this assumption does not hold, manifesting as non-uniform variances in the residuals or errors within a regression framework. Specifically, heteroscedasticity denotes a condition where the variability of the dependent variable demonstrates dependence on the level or value of one or more independent variables, leading to a variance that is not constant across the spectrum of observations (Snijders & Bosker, 2012). This characteristic of the residuals violates a core premise of classical linear regression models, necessitating alternative analytical strategies or transformations to address the ensuing biases in parameter estimates and inferences.

I test the presence of heteroscedasticity the full models both in Table 6.1 and Table 6.5 with the DHARMa package in R (Hartig 2022) (see plot B1, B2, and B3 in the appendix). This produces a QQ plot, which compares the distribution of residuals to a normal distribution, and a Residual vs. Predicted which compares the residuals of the regression model to the predicted values generated by the model. In the QQ Plot, we observe that the points deviate from the expected 45-degree line in all the plots, suggesting that the residuals may not be normally distributed. Moreover, the Kolmogorov-Smirnov (KS) test p-values are indicating that the deviation is significant in all models ($p = 0$), pointing towards non-normality of residuals. This is as expected since EA participation is a rare phenomenon and several of the variables are dichotomous and most observations have value 0 compared to 1 and transforming them would not make much sense. The purpose of the Residual vs. Predicted

plot is to visually assess whether the variance of the residuals is consistent across all levels of predicted values. If the residuals are randomly dispersed around the horizontal axis (which represents a residual value of zero) without any clear pattern, it suggests that the residuals have constant variance (homoscedasticity). Conversely, if there is a pattern, such as a funnel shape where the spread of residuals increases with the predicted values, this is an indication of non-constant variance (heteroscedasticity) (Snijders and Bosker 2022). The Residual vs. Predicted shows some deviation from the red line, though it is not a strong funnel shape or fanning out. The red line in the Residual vs. Predicted, which should represent the smoothed average of residuals, shows some deviation from zero, but it doesn't strongly suggest heteroscedasticity.

6.0 Analysis and results

The forthcoming analysis chapter is dedicated to examining the hypotheses formulated in chapter 3. The objectives are twofold: first, to explore the role of regional permissiveness within the electoral system and second, to assess the extent to which regional election behaviors influence participation in EAs at the national level. To this end, Table 6.1 will present findings relevant to Hypotheses 1-3, which consider the impact of electoral permissiveness and party size. Table 6.2 will address Hypotheses 4-5, focusing on the potential spillover effects from regional to national EA participation.

The analysis will employ a progression of models, from simple to more complex, gradually incorporating interaction terms to understand the nuanced relationships between variables. For a detailed overview of the variables involved see Tables 4.5 and 4.6. As I advance through this chapter, I will systematically dissect the results to reveal the intricacies of EA participation across national elections. This will not only validate the hypotheses but also contribute to the broader understanding of multilevel electoral dynamics.

In Table 6.5 in Full Model A and Full Model B the independent variables regional EA participation and regional EA party count have been kept separate due to the high degree of correlation between the variables (as seen in Table 5.2). Keeping them in the same model could lead to multicollinearity which could inflate the standard errors and make it difficult to distinguish the individual effects of the predictors. By separating the models, I ensure clearer, and more reliable interpretations of each variable's effect (Midtbø 2016, 112), however, I lose out on the combined effect of the variables and the interplay between them.

6.1 Regional variation in EA participation

Table 6.1: Testing the of effect regional variation on EA participation in national elections.

	Reduced model A		**Reduced model B**		**Full model A** (H1 & H2)		**Full model B** (H3)	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Main variables								
Highest electoral threshold	0.131	0.354			1.151***	0.338	-0.026	0.388
Party size			3.252***	0.294	4.633***	0.316	4.831***	0.895
Party Size^2			-1.775***	0.213	-2.417***	0.223	-3.110***	0.678
Highest electoral threshold *Party Size							2.509**	0.926
Highest electoral threshold *Party Size^2							-1.016	0.665
Control variables								
Prev. EA participation					3.737***	0.113	4.281***	0.124
ENP					0.982***	0.092	1.130***	0.112
Year					-0.018***	0.003	-0.009	0.006
Country fixed effects (Belgium as base)								
Finland	5.705**	1.967	4.178**	1.421	-0.207	1.659	3.998*	1.611
Germany	-3.336**	1.215	-4.930**	1.836	-3.123**	1.012	-12.596*	5.614
Greece	-1.111	0.847	-1.447**	0.556	-0.742	0.722	-1.175	0.708
Italy	2.216*	0.893	0.853	0.575	0.121	0.717	-0.739	0.699
Norway	0.411	0.911	-0.732	0.567	-1.846*	0.760	-2.497***	0.723
Portugal	0.232	0.910	-0.377	0.576	-0.283	0.768	-0.665	0.731
Spain	3.097***	0.901	3.191***	0.605	3.009***	0.735	2.713***	0.727
Sweden	-1.312	0.865	-1.940***	0.576	-2.629***	0.740	-3.348***	0.720
Switzerland	-3.286**	1.097	-8.493*	3.696	-6.780***	1.301	-13.043**	4.306
Intercept	-6.069***	0.861	-7.401***	0.566	23.803***	6.647	5.033	11.563
Model statistics								
ICC (elections)	0.529		0.874		0.796		0.882	
ICC (regions)	0.189		0.001		0.032		0.004	
AIC	13043.3		12803.5		10935.9		10838.2	
BIC	13155.7		12924.6		11091.5		11011.1	
Pseudo-R^2	0.788		0.903		0.870		0.933	
Variance elections	6.176		23.00		15.21		25.34	
Variance regions	2.202		0.021		0.60		0.105	
N (elections)	3366		3366		3366		3366	
N (regions)	226		226		226		226	
Total N	41997		41997		41997		41997	

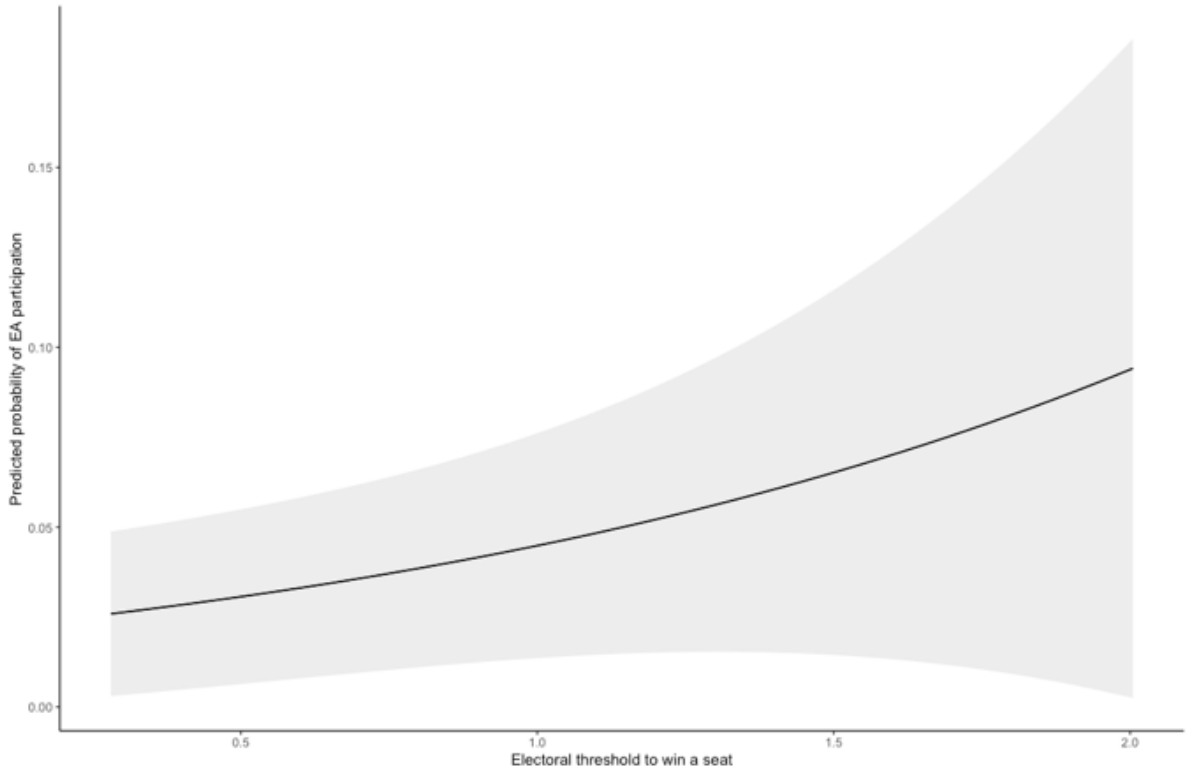
Significance Codes: *** <0.001; ** <0.01; * <0.05. Note: Highest electoral threshold, and party size have been log transformed. The dependent variable is EA participation in national elections in the region.

6.1.1 Analyzing the main independent variables

Table 6.1 displays the findings from four multilevel mixed-effects logistic regression models examining the factors regarding regional variation influencing the likelihood of party participation in EAs across regions, with the aim of testing hypotheses H1, H2, and H3. Reduced models A and B serve as preliminary analyses for hypotheses H1 and H2. These models shows that the coefficient for party size is positive and statistically significant ($p < .001$), indicating that larger parties are more likely to participate in EAs. The squared term of party size is negative and significant ($p < .001$), together, these suggest a curvilinear relationship where very small and very large parties are less likely to participate in EAs. For highest threshold, the coefficient is positive and significant in full model A ($p < .001$), which posits that parties are more likely to participate in EAs in regions with higher electoral thresholds.

In Full Model A in Table 6.1, the effects of highest electoral threshold and party size, along with control variables, on EA participation are examined. The coefficient for the highest electoral threshold is positive and significant. Figure 6.1 suggests that the effect of the highest electoral threshold on EA participation is positive and appears to be exponential. However, this observation should be interpreted with caution due to the widening confidence intervals at higher threshold values, which may affect the precision of the estimates.

Figure 6.1: Highest electoral threshold (logged) and its effect on EA participation.



The average marginal effects (AME) of the highest electoral threshold, in Table 6.2, provide further insights. At the lowest threshold value of 0.9091%, the AME is 0.003611, indicating a relatively low sensitivity in the probability of EA participation to changes at this threshold. As the threshold increases to 20%, the sensitivity rises to an AME of 0.004566. Beyond this point, the AME increases steadily but gradually to 0.004754 at the highest threshold of 100%. This pattern suggests that while the highest electoral threshold does have an increasing effect on the likelihood of EA participation, the rate of change in this effect is relatively stable across the range of highest electoral threshold.

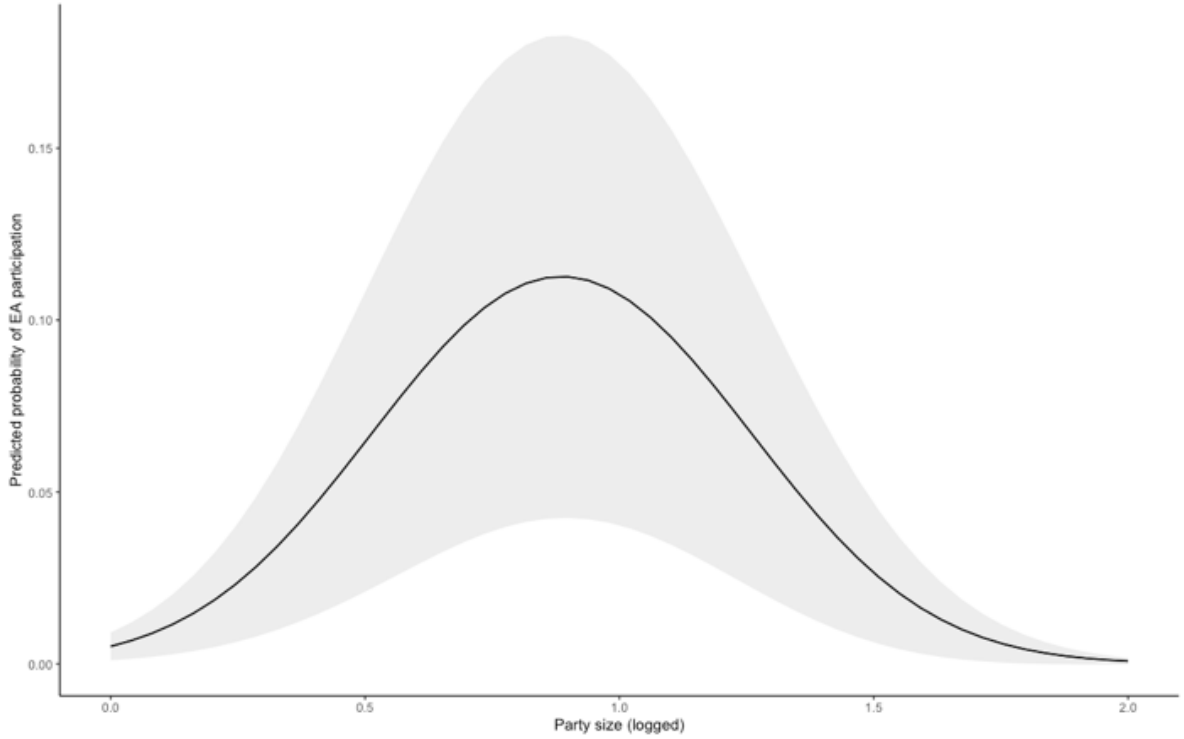
Table 6.2: Average marginal effects of highest electoral threshold. The values of highest electoral threshold at which the AME is measured is in the leftmost column.

Values of highest electoral threshold (logged)	AME of highest electoral threshold	AME of party size
0.2808 (0.9091%)	0.003611	0.1317
1.3222 (20%)	0.004566	0.1945
1.6128 (40%)	0.004636	0.2120
1.7853 (60%)	0.004673	0.2224
1.9085 (80%)	0.004711	0.2298
2.0043 (100%)	0.004754	0.2355

Note: The leftmost column show the values of highest electoral threshold (logged) at which the AME is calculated.

In Full Model A, as presented in Table 6.1, the coefficients for both party size and party size squared align with those observed in Reduced Model B. Specifically, the coefficient for party size is positive and statistically significant, while the coefficient for party size squared is negative and significant. This pattern of coefficients suggests a curvilinear relationship between party size and the likelihood of participating in national elections as part of an electoral alliance (EA), within the regions covered by this dataset. Figure 6.2 visually depicts this curvilinear relationship. It highlights that parties with a logged value of approximately 0.9, which corresponds to about 7% when reconverted to their original scale, are on average the most likely to participate in national elections as part of an EA. This inflection point suggests that there's an optimal party size, beyond which the propensity to join an EA in national elections begins to decline.

Figure 6.2: Party size (logged) and its effect on EA participation.



To further elucidate the relationship between party size and EA participation, I have calculated the average marginal effects (AME) of party size across various values, paying particular attention to the lower range of party sizes. This methodological choice allows for a detailed exploration of how incremental changes in party size impact the likelihood of participating in an EA. The AME analysis sheds light on the sensitivity of EA participation probability to these changes, especially within the context of smaller parties.

Figure 6.1 already highlighted that the peak probability of EA participation corresponds to an average party size of around 7 percent. Complementing this, Table 6.2 reveals a critical transition in the AME: it shifts from positive to negative as party size increases from 6% to 7%. This inflection point is pivotal, indicating that beyond a party size of approximately 7%, further increases in size have a diminishing and further on a negative impact on the likelihood of EA participation. Essentially, at this juncture, the effect of changes in party size on the probability of EA participation becomes minimal or adverse.

Table 6.3: Average marginal effects of party size.

Values of party size (logged)	AME of party size
0.0000 (0%)	0.179001
0.301 (1%)	0.191278
0.477 (2%)	0.131116
0.6021 (3%)	0.086132
0.6990 (4%)	0.053941
0.7782 (5%)	0.029226
0.8451 (6%)	0.009054
0.9031 (7%)	-0.008221
0.9542 (8%)	-0.023483
1.0000 (9%)	-0.037331
1.0414 (10%)	-0.050073
1.0792 (11%)	-0.061949
1.204 (15%)	-0.103111
1.322 (20%)	-0.143947
1.1613 (40%)	-0.088687
1.7853 (60%)	-0.169197
1.908 (80%)	-0.120406
2 (100%)	-0.08563

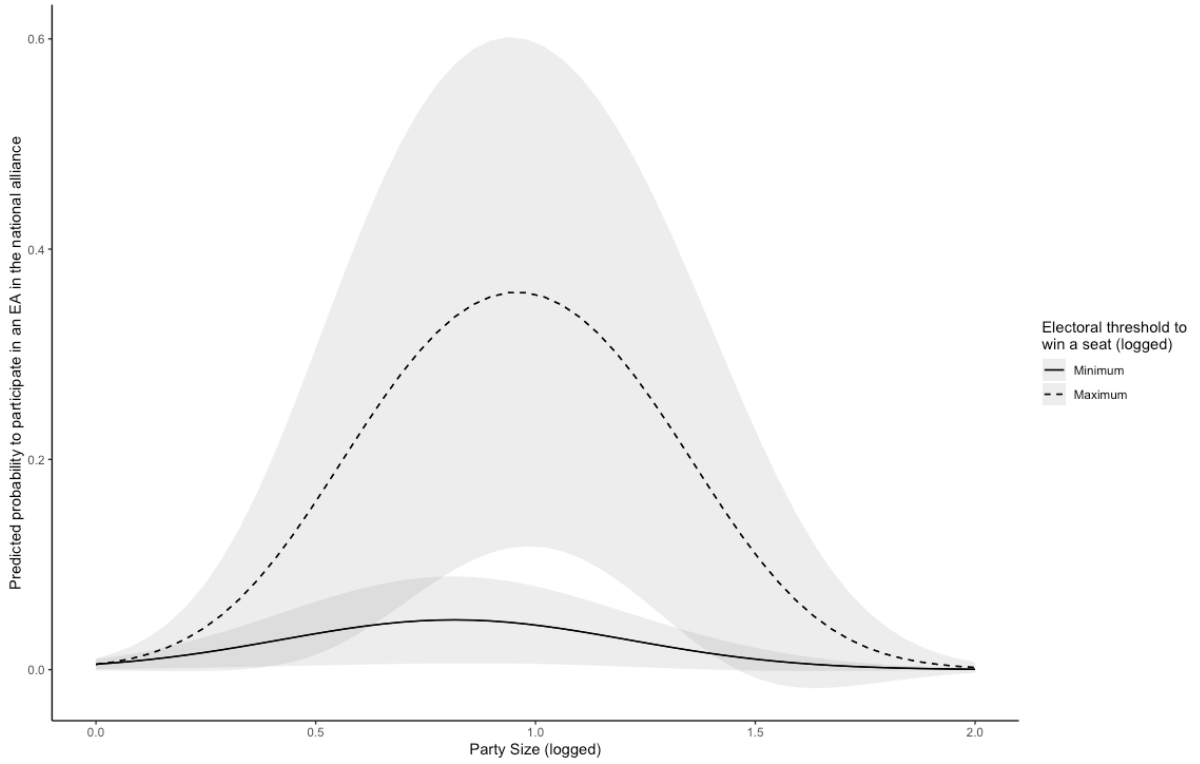
Note: The column to the left show the values of party size (logged) at which the AME is calculated.

The interaction term

Full model B, test the interaction term between the highest electoral threshold and party size. The coefficient of the interaction term with the linear party size variable is positive and significant ($p < .01$), but the interaction with party size squared, is not, even though the party size squared in itself is significant. It seems to be reason to believe that the effect of party size is indeed modulated by the highest electoral threshold of the region.

Figure 6.3 illustrates the relationship between party size and the highest electoral threshold. It shows how the likelihood of EA participation is at the highest when the logged size of the party is at 0.9. Since the variable is log transformed with the base of 10 plus 1 as a constant, the logged party size value of 0.9 equals a party size of 7%.

Figure 6.3: The interaction term between the size of the party and the electoral threshold to win a seat in the region.



The interplay between party size and the highest electoral threshold is further examined in Table 6.4. This table showcases how the average marginal effect (AME) of party size evolves across different party size levels as the highest electoral threshold varies from its minimum (0.91%) to its maximum (100%). The selected values for computing the AME of party size span the entire spectrum, with an emphasis on smaller parties to capture a broader range of effects.

In Table 6.4, the columns labeled “Threshold (AME)” and “Party Size (AME)” denote the average marginal effects of these variables at specific levels of party size and electoral threshold, as outlined in the first three columns. One notable observation is that the AME of party size itself exhibits a less pronounced change when the party size is at 25%. However, for other party sizes, the AME of party size shows significant variations at different threshold levels. Generally, the AME of party size tends to become more positive at higher threshold values when it is initially positive at the minimum threshold, and conversely, more negative when starting off negative at the lowest threshold. An exception to this pattern is observed at a party size of 10%, where the AME is initially negative and becomes less negative as the

threshold increases. These variations in the AME of party size across different threshold levels suggest that the impact of party size on EA participation is significantly influenced, or modulated, by the electoral threshold. This modulation reflects the varying dynamics of party size and its influence on EA participation under different electoral threshold conditions.

Table 6.4: Average marginal effects (AME) of threshold and party size at different measures of size and highest electoral threshold from Full model A in Table 6.1.

Values of the variables			Average marginal effect (AME)	
Party size (vote share per)	**Party size (logged)**	**Threshold (logged)**	**Threshold (AME)**	**Party size (AME)**
0%	0	Min (0.91%)	-0.0006677	0.14119
0%	0	Max (100%)	-0.0006544	0.24618
1%	0.30	Min (0.91%)	0.0251103	0.13833
1%	0.30	Max (100%)	0.0264575	0.28178
10%	1.04	Min (0.91%)	0.0626950	-0.06447
10%	1.04	Max (100%)	0.0394575	-0.02246
25%	1.41	Min (0.91%)	0.0550711	-0.15019
25%	1.41	Max (100%)	0.0504629	-0.15875
50%	1.70	Min (0.91%)	0.0275491	-0.12696
50%	1.70	Max (100%)	0.0546267	-0.31975
75%	1.88	Min (0.91%)	0.0123608	-0.08132
75%	1.88	Max (100%)	0.0317399	-0.27387
99%	1.99	Min (0.91%)	0.0061825	-0.05351
99%	1.99	Max (100%)	0.0151634	-0.17478

Note: The three leftmost columns show the values at which the AME is calculated. The first column show the non-logged values of party size that the AME is calculated at.

6.1.2 Control variables and model statistics

Going back to Table 6.1 and taking a look at the control variables, can we see that the coefficient of previous EA participation positive and significant across all models, indicating that parties that participated as an EA the previous national election in the same region are more likely to do so in the subsequent election. Effective number of parties (ENP) is also positive and significant, suggesting that a greater number of effective parties in a region increases the likelihood of EA participation. The negative coefficient of the Year variable suggests a slight decrease in the likelihood of EA participation over time, although the effect is very small. Significant fixed effects are observed for several countries, indicating that

country-specific factors also influence EA participation. For instance, Finnish parties are more likely to participate in EAs compared to the base category (Belgium), while German and Swedish parties are less likely. When it comes to model statistics does the ICC for elections suggests substantial variability in EA participation across elections, particularly in the reduced models. The variability across regions, however, is quite small. The AIC and BIC indicate the relative quality of each model, with full model A showing the best fit for H1 and H2, while full model B has a slightly higher AIC and BIC, potentially due to the added complexity of the interaction term. The pseudo-R-squared values are relatively high for logistic regression models, indicating that a significant proportion of the variance in EA participation is accounted for by the models.

In the following section, I will delve into the results of the statistical models developed to test Hypothesis 4 and Hypothesis 5. These hypotheses, as previously outlined, focus on the spillover from regional election EA participation onto national elections, and are crucial in furthering our understanding of the multilevel perspective of EA participation. The detailed results of these tests can be found in Table 6.5. In these models, party size and highest electoral threshold are incorporated as control variables, reflecting their established impact on EA participation as identified in existing literature and supported by my own findings. Moreover, due to the observed significance of the interaction between these two variables, this interaction term is also included and examined in the models.

6.2 Spillover from regional elections

Table 6.5: Testing the effect of regional spillover on EA participation in national elections.

	Reduced model A		Reduced model B		Full model A (H5)		Full model B (H4)	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Main variables								
Regional EA participation			1.808***	0.121			1.704***	0.151
Regional EA party count	4.705***	0.302			1.781***	0.367		
Control variables								
Highest electoral threshold					-1.329***	0.387	0.222	0.310
Party size					2.367**	0.849	2.599**	0.816
Party Size^2					-1.259*	0.631	-1.642**	0.609
Highest electoral threshold *Party Size					4.250***	0.923	3.376***	0.816
Highest electoral threshold *Party Size^2					-2.443***	0.661	-1.735**	0.582
Prev. EA participation					4.071***	0.122	4.143***	0.123
ENP					0.888***	0.094	0.894***	0.079
Year					-0.031***	0.002	-0.027***	0.003
Country fixed effects (Belgium as base)								
Finland	5.309**	1.967	3.449*	1.753	3.513*	1.401	5.185***	1.281
Germany	-4.976***	1.485	-6.873*	2.871	-4.957*	2.073	-17.40***	4.739
Greece	-2.125*	0.943	-1.383	0.860	-0.235	0.599	0.085	0.577
Italy	1.650	0.954	1.904*	0.868	0.204	0.599	1.129*	0.572
Norway	0.040	0.964	0.279	0.881	-1.102	0.607	0.783	0.591
Portugal	-0.302	0.968	-0.247	0.887	0.679	0.622	0.821	0.606
Spain	1.925*	0.971	2.540**	0.876	3.825***	0.624	3.859***	0.597
Sweden	-1.996*	0.944	-1.427	0.873	-1.936**	0.599	1.719**	0.581
Switzerland	-4.905***	1.259	-4.231**	1.532	-10.095**	3.469	-5.909***	1.103
Intercept	-4.932***	0.885	-5.381***	0.798	50.355***	4.726	41.782***	5.038
Model statistics								
ICC (elections)	0.445		0.487		0.863		0.770	
ICC (regions)	0.247		0.197		0.001		0.016	
AIC	12824.6		12794.9		10805.2		10844.5	
BIC	12937.0		12907.3		10986.8		11026.1	
Pseudo-R^2	0.789		0.798		0.908		0.917	
Variance elections	4.758		5.075		20.78		11.83	
Variance regions	2.637		2.058		0.02		0.25	
N (elections)	3366		3366		3366		3366	
N (regions)	226		226		226		226	
Total N	41997		41997		41997		41997	

Significance Codes: *** <0.001; ** <0.01; * <0.05. Note: Regional EA party count, highest threshold, and party size have all been log transformed. The dependent variable is EA participation in national elections in the region.

6.2.1 Analyzing the main independent variables

The reduced models A and B provide a baseline understanding of how regional EA participation and regional EA party count affect EA participation in national elections by regions when only the random effects and the country fixed effects are present in the model. Both the coefficient for regional EA participation and regional EA party count are significant and positive. Full Model A and Full Model B test the effect of these independent variables on national EA participation with control variables.

In Full Model B the control variables have been included and the coefficient for regional EA participation (as per Hypothesis 4) still is positive and statistically significant ($p < .001$). This finding suggests that participation in a regional election as part of an EA is associated with an increased likelihood of participating in the subsequent national election within an EA. Table 6.6 further elucidates this relationship by presenting the AME of regional EA participation when regional EA participation is 0 and 1, and for each of these conditions, when previous national EA participation is also 0 and 1. The AMEs consistently show that regional EA participation positively influences the probability of participating in national elections as part of an EA. Interestingly, this effect persists regardless of whether the party had participated in the previous national election as part of an EA. This indicates that the impact of regional EA participation on national EA participation is significant in its own right and is not solely contingent on past national election involvement.

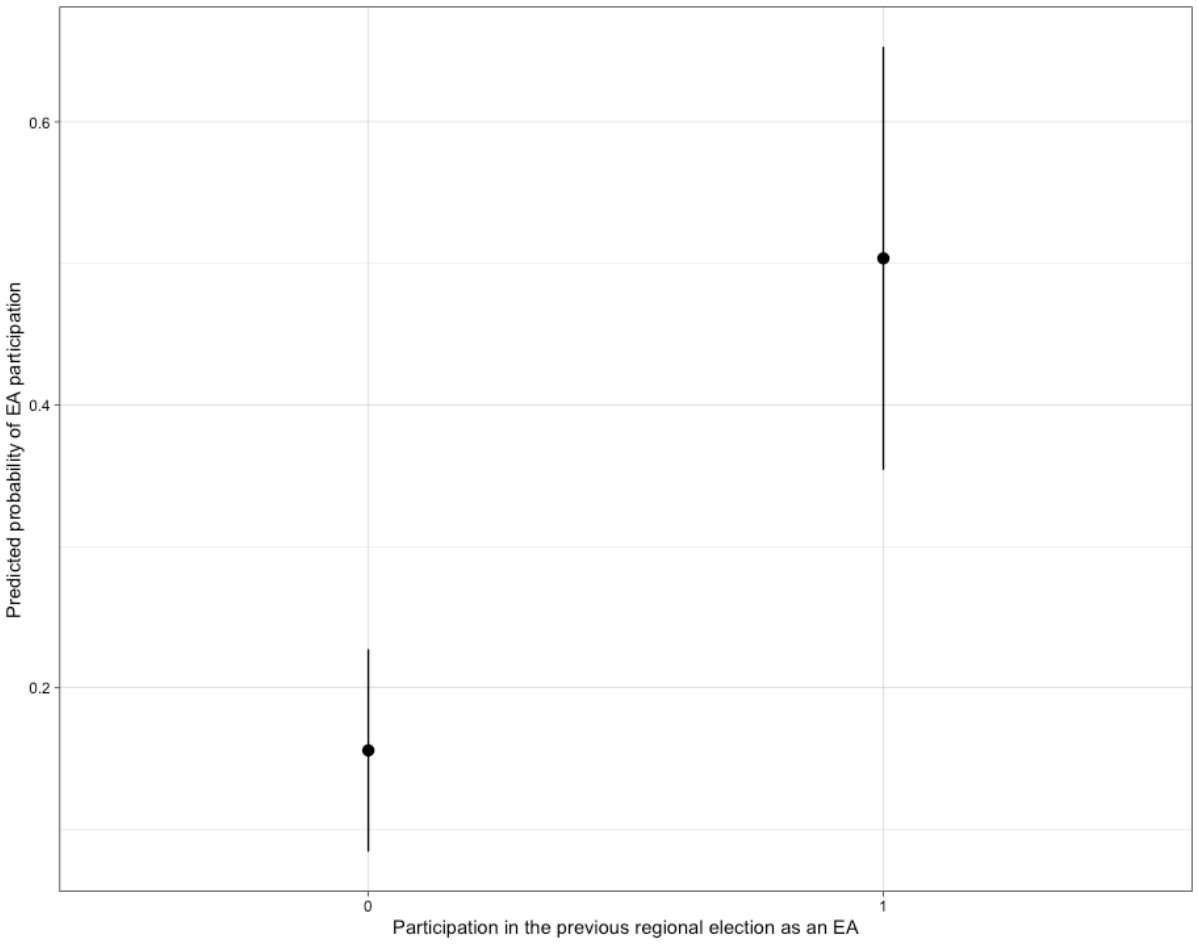
Table 6.6: Average marginal effect (AME) of regional EA participation.

Values of previous national EA participation	Values of regional EA participation	AME of regional EA participation	AME of previous national EA participation
0	0	0.04355	0.1059
0	1	0.08193	0.1992
1	0	0.10495	0.2552
1	1	0.15233	0.3704

Note: The leftmost and the next column show the values of previous national EA participation and regional EA participation at which the AME is calculated.

Figure 6.4 reinforces the findings discussed above and visually illustrates that parties which participated in the previous regional election as part of an EA exhibit a substantially higher likelihood of participating in an EA in the subsequent national election within the same region.

Figure 6.4: The plotted effect of regional EA participation on national EA participation from Full model B.



In Full Model A, the variable regional EA party count (as per Hypothesis 5) is observed to have a significant effect on the likelihood of EA participation in national elections, even after accounting for other relevant variables. This finding implies that a party's chances of participating in a national EA are higher if it was part of a regional EA with a larger number of parties. However, due to multicollinearity issues, as previously discussed, it was challenging to accurately quantify the additional effect of participating with more parties in a regional EA using this dataset.

Despite this limitation, the analysis extends to examining the average marginal effect (AME) of regional EA party count in relation to previous national EA participation. This aspect is explored in Table 6.7, which assesses the impact of regional EA party count on national EA participation under two conditions: when previous national EA participation is at its minimum (0) and maximum (1), and when regional EA party count (logged) ranges from its minimum (0) to its maximum (0.9031). Notably, when converted back to its original scale, this maximum value corresponds to participation with seven parties in the regional EA. The results reveal that both the AME of regional EA party count and previous national EA participation significantly increase when the regional EA party count rises from its minimum to its maximum value. This suggests that there is, on average, an enhanced likelihood of a party participating in national elections within an EA if it was part of a previous regional EA with a higher number of parties.

Table 6.7: Average marginal effect (AME) of regional EA party count (logged).

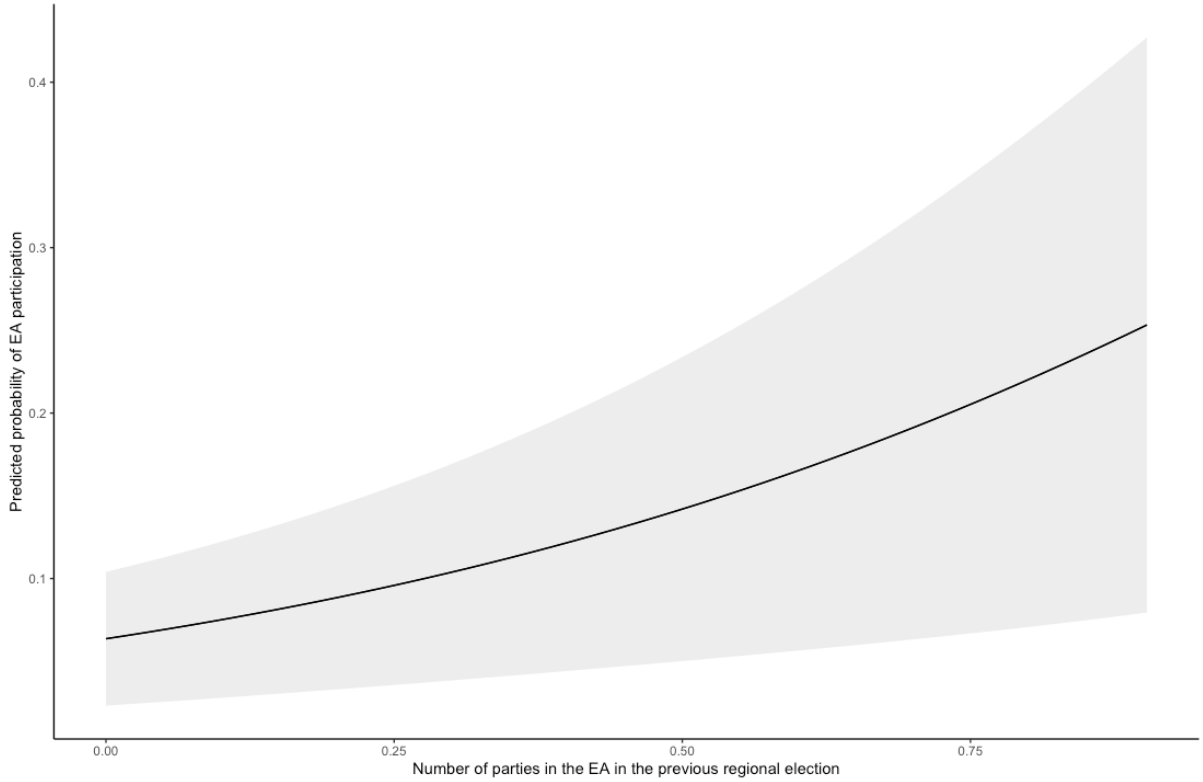
Values of previous national EA participation	**Values of regional EA party count (logged)**	**AME of regional EA party count**	**AME of previous national EA participation**
0	0	0.04630	0.1058
0	0.9031 (7 parties)	0.08068	0.1844
1	0	0.08005	0.1830
1	0.9031 (7 parties)	0.11175	0.2554

Note: The leftmost and the next column show the values of previous national EA participation and Values of regional EA party count (logged) at which the AME is calculated.

Figure 6.5 supports the claims above and indicates that the more parties the party participated in an EA with in the previous regional election the more likely was it to participate in the next national election as an EA in the same region.

Figure 6.5 corroborates the assertions made earlier and illustrates a clear trend: the greater the number of parties a party collaborated with in an EA during a previous regional election, the higher the likelihood of its participation in the subsequent national election as part of an EA within the same region. This graphical representation not only supports my previous findings but also visually emphasizes the positive correlation between the extent of collaboration in regional EAs and subsequent national EA participation.

Figure 6.5: The effect of regional EA party count on national EA participation from Full model B.



6.2.2 Control variables and model statistics

When including the control variables party size, the highest electoral threshold, and their interactions in the full models in Table 6.5, they have almost the same effects on national EA participation as in Table 6.1, where these variables was tested as independent variables. The only exception is highest threshold, which contrary to all other models, have a significant negative effect on the likelihood that the party participates as an EA in the national election in Full model A. It behaves similar in the interaction with party size, though, which could indicate that it still have a similar effect when modulated by party size, but that the effect of the highest threshold outside of the interaction changes when I introduce the variable indicating the number of parties in the EA in the previous regional election.

In Full Model A, demonstrate that these factors significantly influence the likelihood of national EA participation. The positive coefficient for party size indicates that larger parties are more inclined to participate in EAs, and the negative coefficient for party size squared suggests that there is a peak party size beyond which the likelihood of EA participation

decreases, pointing to a curvilinear relationship. The highest electoral threshold, although showing a negative association with EA participation, is not a significant predictor in this model. In Full model B, highest threshold is positive, but not significant. The other control variables, EA participation in the previous national election, effective number of parties (ENP), and the year of the election, all have similar effects on EA participation in national elections as in Table 6.5, where both EA participation in the previous national election and effective number of parties (ENP) have coefficients that are positive and significant, while the year of the election has a coefficient that is marginally negative, but significant.

Figure 6.6, Figure 6.7, and Figure 6.8 shows the effect of the control variables EA participation in the previous national election, effective number of parties (ENP), and the year of the election on EA participation in national elections, respectively. They are derived from Full model A because this is the model with the best model fit in terms of the lowest AIC and BIC compared to Full model B.

Figure 6.6: EA participation in the previous national election in the region and its effect on the likelihood of EA participation in the subsequent election.

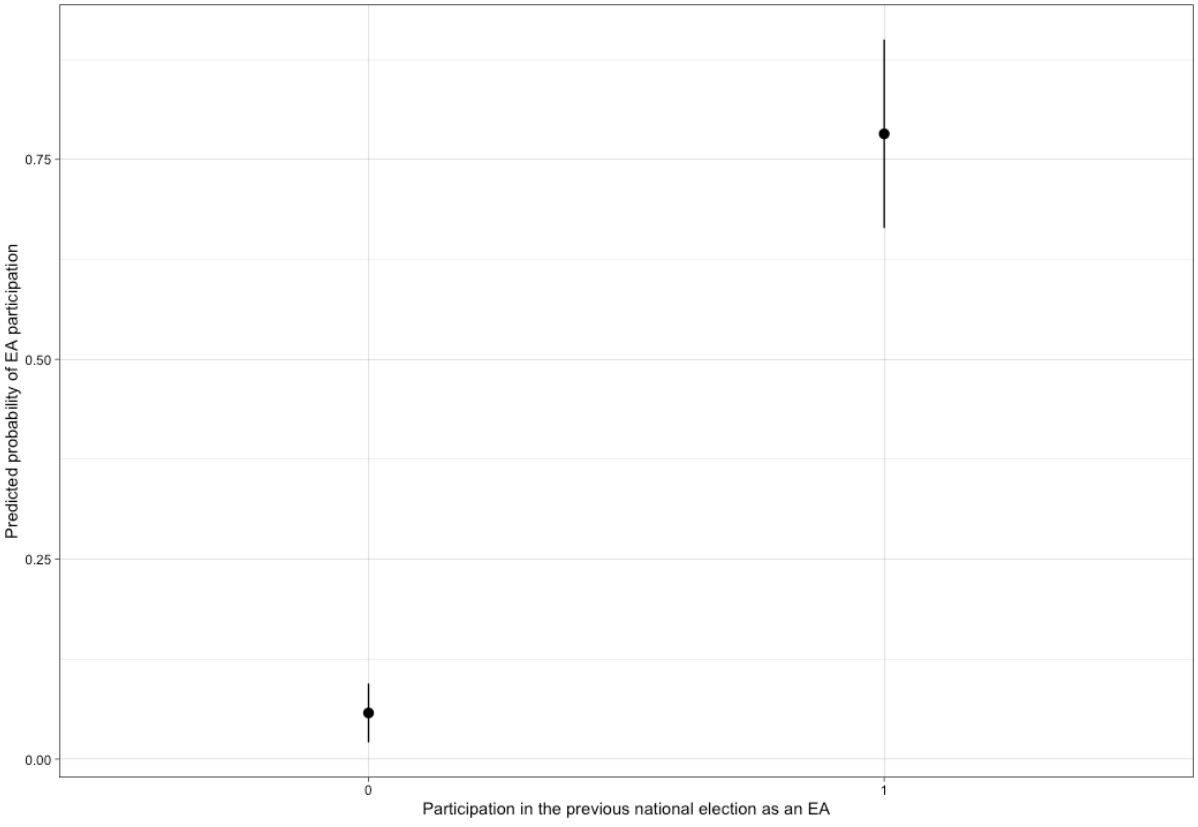


Figure 6.7: Effective Number of Parties (ENP) and its effect on the likelihood of EA participation.

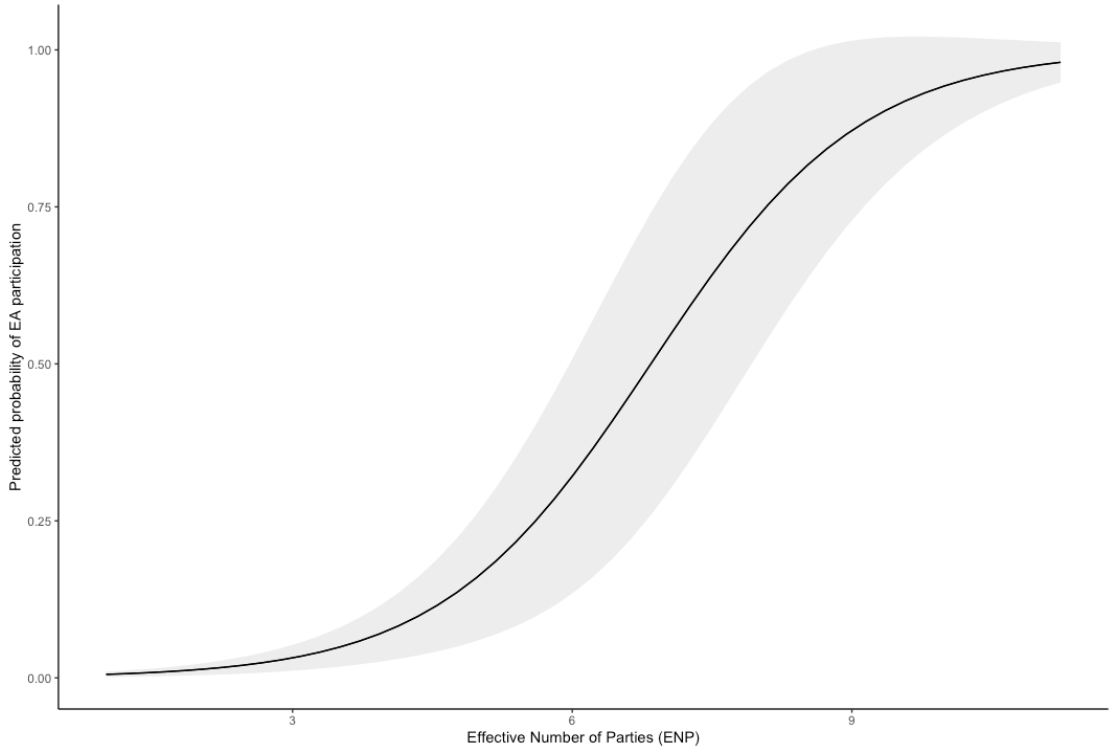
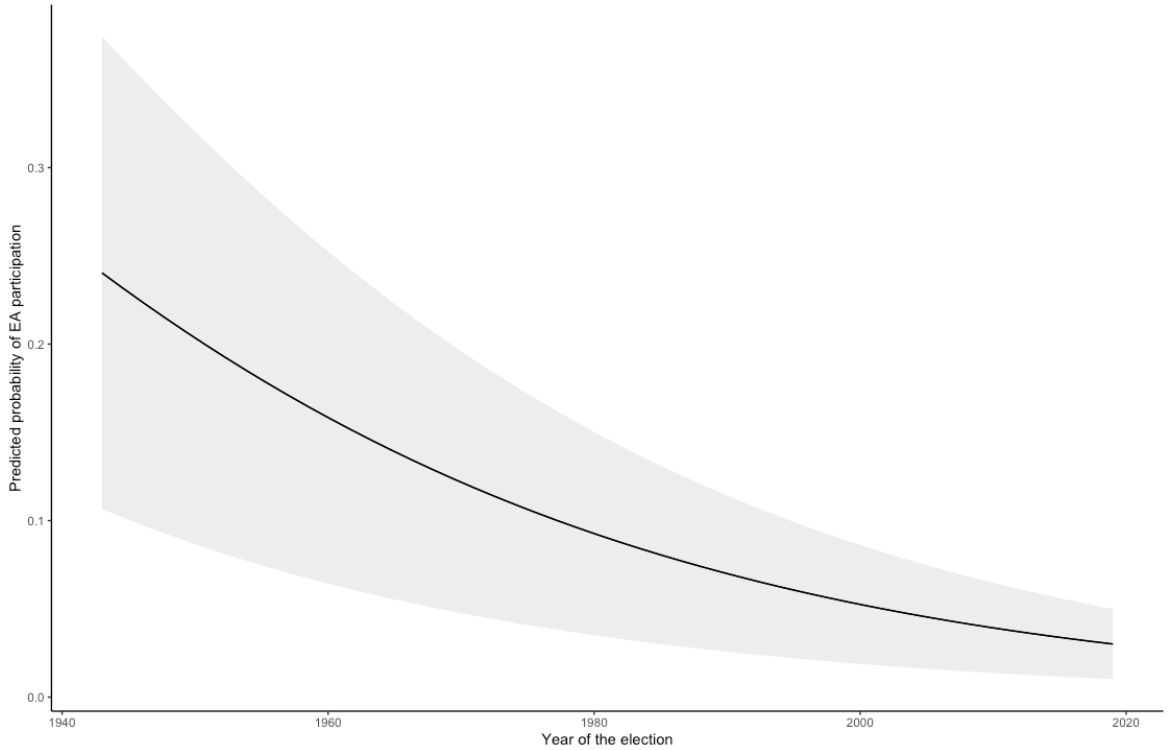


Figure 6.8: Year of the election and its effect on EA participation.



In Full Model A, the AIC and BIC are observed to be lower than those in the corresponding reduced model, indicating a more parsimonious fit when the main variable of interest, regional EA party count, is included. This model exhibits a relatively high pseudo-R^2 value, signifying that a substantial proportion of the variance in national EA participation is captured within the model's parameters. Conversely, Full Model B, while testing H4 regarding the effect of regional EA participation on national EA participation, also demonstrates an improved model fit over its reduced counterpart, as evidenced by lower AIC and BIC values. The ICC for elections in Full Model B is notably high, reflecting significant heterogeneity in EA participation across elections, whereas the low ICC for regions suggests that within-region variance in EA participation is relatively minimal. Both full models reveal that country-specific fixed effects are pronounced for some of the countries when compared to the baseline (Belgium), underscoring the salient influence of national contexts on the propensity for national EA participation. Collectively, the robustness of Full Models A and B in table 6.5 substantiates the theoretical assertion that regional EA dynamics spill over to the subsequent national EA participation, comprehensively accounting for a diverse array of influencing factors inherent to the political landscape.

7.0 Discussion and conclusion

In the concluding chapter of this thesis, I embark on a comprehensive discussion and analysis of the findings presented in Chapter 6. The focus will be on evaluating the extent to which the empirical evidence supports the hypotheses formulated at the outset of this study. The primary objective of this research was to investigate how regional variations and past experiences in regional electoral contexts influence the likelihood of political parties participating in EAs in national elections. This discussion will critically assess the validity of these initial assumptions and the implications of the findings.

Each hypothesis will be scrutinized in turn, starting with an analysis of the regional differences in electoral systems. This includes exploring the effects of the highest electoral threshold and regional party size on EA participation, as outlined in Hypotheses 1-3. Subsequently, the discussion will shift to the spillover effects from regional to national elections, examining the continuity of EA strategies across electoral levels, as captured in Hypotheses 4 and 5.

Additionally, this chapter will reflect on the broader implications of the study's findings. It will offer an updated perspective on the role of EAs in a multilevel electoral context, highlighting how these alliances are shaped by and contribute to the evolving political landscape. Furthermore, the limitations of the thesis will be acknowledged, providing a candid assessment of the study's constraints and areas where the methodology or data might have influenced the results. Finally, the chapter will outline potential avenues for future research. Based on the insights gained from this study, recommendations will be made for subsequent investigations that can build upon and expand the understanding of EAs within the multifaceted framework of regional and national electoral dynamics.

7.1.1 Regional variation in national elections

Hypothesis 1 posits that parties participate in EAs more often in regions with a higher electoral threshold of entering the national parliament. This is tested in Full model A in Table 6.1, and it indicate that there is a positive and significant relationship between highest electoral threshold and EA participation. As indicated by Figure 6.1 and Table 6.2, does the

relationship between EA participation and highest electoral threshold seem to be relatively stable across the range of the threshold in the region, but that it increase more the higher it becomes. The effect in itself, however, is not relatively small, but nevertheless would I say that Hypothesis 1 is strengthened.

Hypothesis 2 states that parties participate in EAs more often in regions where they are small and large but not too large. The effect should therefore take the form of a U-shape, where small parties and large but not too large parties had the highest likelihood of participating in national elections in the region as part of an EA. To test for this non-linear relationship with the dependent variable, party size was included in the models in Table 6.1 as both a linear (non-squared) and a quadratic (squared) term. The results from Reduced model B and Full models A and B in Table 6.1 indicate that these expectations are only partly supported by the models. Across all of the models, the linear party size term is positive while the quadratic term is negative, and all of them significant. This indicates that the relationship between party size and EA participation in national elections takes the shape of a U, but that it is upside-down with a peak around a party size of 7%, as indicated by Figure 6.2. This, then, indicates that parties are most likely to participate in EAs in regions where they are small or medium-small. The original H2-argument, however, is that parties participate in EAs when they are too small to win a seat on their own, either because of the number of seats in the region are so few that the de facto threshold to win a seat becomes higher, or because there is a national electoral threshold that forces parties to reach a certain amount of votes in total in the country. Then it becomes reasonable that parties will participate in EAs when they are not certain to make the threshold on their own. Plot 6.1 indicate that party size has the highest effect on EA participation when the logged value is at 0.9, when transforming this back to the original value, this equals to a party size of 7%. This inflection point is further confirmed by the average marginal effects of party size as presented in Table 6.3. However, the mean highest electoral threshold is 12.9% (see Table 4.4), which then indicates that parties on average have the highest likelihood to participate as part of an EA in regions where they are 5.9 percentage points away from the mean value of highest electoral threshold.

As detailed in chapter 4 (Table 4.4), it is observed that the majority of parties participating in an EA during a national election had not taken part in the previous national election within the same region. This pattern implies that these parties, despite their non-participation history, do not predominantly influence the likelihood of EA participation in subsequent

elections. Instead, they introduce valuable variation into the analysis. An additional perspective is offered in Table C1, Model H3 of the appendix, where the impact of party size on EA participation is re-evaluated, excluding parties with a zero size. Interestingly, this model reveals that party size, in the absence of these very small or non-participating parties, does not significantly affect EA participation. Furthermore, neither the electoral threshold nor its interaction with party size shows a substantial influence. This finding underscores the nuanced nature of the factors driving EA participation and suggests that, beyond a certain threshold, party size alone may not be a decisive factor.

Contrary to the expectations, are there no evidence suggesting that large parties participates as part of EAs in regions where they are quite large, but not too large. Some large parties do participate as part EAs but this is rare. This could mean that parties first and foremost use EAs as a strategic choice in regions in national elections in order to reach the electoral threshold and gain representation. In sum, it seems like parties on average have the highest probability to participate as part of an EA in a region when they are at 7% or just below, when everything else is held constant. I would not call these parties very small, but rather medium small. Parties, then, seems to on average participate as part of EAs when they on average are 5.9 percentage points away from the highest electoral threshold of winning a seat. This could indicate that parties that are very far away from the threshold doesn't think that making the threshold of winning a seat is likely to happen and therefore does not try, or it could mean that these parties are not attractive enough in the eye of other parties because they have little to offer and that they are not interested in participating in an EA with them. The intention of EA participation in these cases would be to overcome the threshold by adding the sizes of the parties together and distribute the seats afterwards. But when a party is at 0% there is no value to add to the party looking for a party to help them make it into the parliament, and therefore, there is nothing to gain for them by including the 0% party. The effect of party size, however, does in general seem to be dependent on the level of the highest electoral threshold. This dependency will be further explained in the next section where I discuss the findings related to Hypothesis 3.

Hypothesis 3 posits that parties are most likely to participate in EAs in regions where they are small and large but not too large and the highest electoral threshold is high. The analysis in Table 6.1 and Full Model B supports this claim, by indicating a significant interaction between party size and the highest electoral threshold. This relationship is particularly

evident when party size is around 7%, as shown in Figure 6.3. While party size already is identified to have a squared upside-down U-shape relationship with the likelihood of EA participation, does the presence of a higher value of highest electoral threshold increase this effect, as shown in Plot 6.2. This, then, supports the hypothesis that the effect of size is increased when the highest electoral threshold.

Table 6.4 reveals a noteworthy trend: as the highest electoral threshold increases from its minimum to maximum value, the Average Marginal Effect of party size also tends to increase substantially across most party sizes. This suggests a strategic calculus for parties considering participation in an EA. It appears that parties are most inclined to join an EA in a region when their size is approximately 6 percentage points below the average electoral threshold. This specific margin likely represents an optimal balance where participating in an EA becomes a strategically advantageous choice, both in terms of securing seats and remaining an attractive partner for other parties.

To contextualize this finding, consider a hypothetical scenario. Imagine a party that, on a national scale, it might have a size of 10%, but in one specific region, its size is 6% with the regional electoral threshold set at 4% for winning a seat. In this case, the party might confidently expect to secure a seat independently, thus seeing little incentive to join an EA. Conversely, in another region where this party also has a size of 6%, if the electoral threshold for winning a seat is higher, say 11%, the party's likelihood of achieving a seat independently diminishes. Consequently, in this region with a higher threshold, the party would find it more advantageous to participate in an EA for the subsequent national election. This differential in the highest electoral threshold of the regions and corresponding party sizes illustrates how the decision to participate in an EA can be influenced by regional variation in the permissiveness of the electoral system, as well as the size of the party in relation to the threshold.

7.1.2 Spillover from regional to national elections

Hypothesis 4 posits that the experience of engaging in electoral alliances (EAs) during regional elections enhances the probability of forming national EAs in subsequent elections. Drawing on Ibenskas's (2015) findings, which indicated the influential role of prior EA participation on future national electoral strategies, this hypothesis extends the argument to regional elections. It suggests that parties' experiences within a multilevel political landscape,

where past behaviors have demonstrable impacts, should similarly affect national EA participation.

The analysis presented in Table 6.5 (Full model B) substantiates this hypothesis, revealing a positive and statistically significant coefficient related to previous regional EA participation. Complementary to this, the average marginal effects detailed in Table 6.7 further corroborate the hypothesis by highlighting the incremental effect of prior regional EA involvement on the likelihood of participating in a national EA in the same region. These findings are visually reinforced by the corresponding plot, which illustrates the tangible impact of regional EA experience on national EA participation. Collectively, the evidence from the statistical analysis and the graphical representation offers robust support for Hypothesis 4, affirming the significance of regional electoral experiences in shaping national electoral alliance behaviors.

The last hypothesis, Hypothesis 5, states that cooperating with more parties in the previous regional election increases the likelihood of national EA participation in the subsequent election. This hypothesis is grounded in the findings of Andersen (2020), who demonstrated that parties allied with multiple partners are more likely to form EAs. Such parties are presumed to be more flexible, better connected, and therefore more attractive to potential allies.

The empirical support for Hypothesis 5 is evident in the analysis presented in Table 6.5, Full model A. Here, the data reveals a positive and significant correlation between the count of regional EA parties and the likelihood of their participation in a national EA in the following election. This relationship holds true even for parties that were part of an EA in the preceding national election. Specifically, the average marginal effects, as detailed in Table 6.8, indicate a notable increase in the probability of EA participation at the national level when a party collaborates with a larger number of allies (up to seven parties) in a regional EA.

The simultaneous examination of the impact of regional EA participation and regional EA party count would have been insightful, but as discussed, multicollinearity precludes the reliability of such a model. Despite this, the analysis in this thesis suggests that political parties are more likely to participate in national elections by regions as part of EAs if they were part of a regional EA, particularly when that EA consisted of a larger number of parties, which consequently strengthens H4 and H5.

7.2 Implications

In this thesis I have undertaken a comprehensive examination of EA participation within a multilevel electoral framework, guided by two distinct sets of hypotheses. The initial focus was on the variability in regional electoral systems, specifically the threshold for winning seats and its interaction with party size (Hypotheses 1-3). Then I explored the potential spillover effects from regional to national elections, analyzing how strategic decisions made by parties at the regional level, such as EA participation and the breadth of these alliances, influence their behavior in national elections (Hypotheses 4 and 5). These findings contribute significantly to our understanding of political parties' behavior and alliance formation strategies across different electoral levels.

Addressing a notable gap in the literature, this research highlights the often-overlooked multilevel perspective in EA participation studies. While some researchers have acknowledged these multilevel aspects, a thorough cross-national analysis has been largely missing. The findings of this thesis underscore the impact of regional variations on national EA participation and confirm the existence of spillover effects from regional electoral experiences.

The key findings include: (1) An increase in the highest electoral threshold at the regional level positively influences EA participation. (2) Parties are most likely to participate in EAs when their regional vote share in the previous national election was approximately 7%, typically about 6 percentage points below the regional mean threshold of winning a seat. (3) The interplay between regional party size and the threshold for winning a seat is crucial, with varying incentives for EA participation as these factors change. (4) Parties that participated in regional elections as part of EAs are more likely to participate as part of an EA in the subsequent national election as part of an EA, with this likelihood increasing further with more partners in previous regional alliances.

These results enrich our comprehension of EA participation dynamics. Existing literature primarily focuses on the size dynamics of parties in EA formation, noting motivations ranging from securing representation for smaller parties to ensuring victory for larger ones. My research contributes to this narrative by pinpointing the specific conditions under which

parties are most inclined to join EAs, particularly their proximity to electoral thresholds. Moreover, my research extends the understanding of the influence of previous EA experiences. Building on findings that prior participation predicts future EA engagement, this study reveals that such experiences in regional elections also play a significant role.

In challenging the existing literature, this thesis questions the dominance of methodological nationalism, which traditionally views the nation-state as the primary analytical unit. Instead, it emphasizes the importance of regional variations and experiences, demonstrating their critical role in shaping EA participation strategies at the national level.

7.3 Limitations

This thesis, while thorough in its approach to identifying Electoral Alliance (EA) parties during dataset coding, is not without its limitations. The process of coding, which I have detailed in Chapter 4, was guided by a set of self-imposed rules aimed at ensuring the correct identification of EAs. Despite this, challenges persisted due to the varying quality of official election data sources. In cases where these sources proved inadequate, I resorted to supplementary information from online platforms such as Wikipedia, news articles, and party websites. The reliability of these sources is inherently varying, and they are not guaranteed to provide comprehensive coverage of every party in each election. Consequently, the potential for inaccuracies in the dataset cannot be overlooked, and such errors, however unintentional, could influence the research findings. Another factor that could play a part is the slight amount of heteroscedasticity that there was found some evidence of in chapter 5.4.

Moreover, the nature of manual data collection and coding inherently carries the risk of human error. Despite rigorous efforts to cross-verify data and avoid the overrepresentation of EA parties, the complexity of the task means that the dataset may still contain mistakes. Nonetheless, the dataset represents a novel compilation of information, collated using the best resources currently available. It's conceivable that individuals with specialized knowledge of particular electoral scenarios could enrich the dataset further. Despite the challenges, the dataset provides a valuable new resource for understanding the dynamics of EA participation and offers a foundation for future research.

7.4 Further research

In this thesis, the separate analysis of Full Model A and Full Model B, as presented in the second regression table (6.5) was necessitated due to multicollinearity, as shown in Table 5.2. While this approach, recommended by Midtbø (2016, 112), clarifies the individual effects of regional EA party count and regional EA participation, it unavoidably omits their combined influence and limits the possibilities of understanding the added effect of one when the other also is present. Addressing this limitation through future research that can effectively model these joint effects would be insightful.

The investigation raises further questions: Does spillover of EA participation only occur within the same region, or does it extend to national participation influenced by regional elections in different regions? Moreover, the propensity of parties, particularly those not involved in the previous national election within the same region, to participate in EAs despite a very low probability of success, prompts curiosity. These parties, often having a zero size from previous national elections, might not be inherently small or new. They may have regional popularity or previous participation elsewhere, choosing EAs as a strategic move to surpass electoral thresholds. Understanding these dynamics could yield valuable insights into party strategies.

Research distinguishing between joint lists and other electoral alliances is also necessary. Current studies, like Golder's (2005, 2006a, 2006b) and Ibenskas (2015), tend to either pool these forms or focus on one type, leaving a gap in understanding their strategic differences and prevalence across systems. Additionally, examining EA participation in European and municipal elections would contribute to a more comprehensive multilevel perspective. Furthermore, future studies should explore the formation and continuation of connections from regional to national elections, specifically assessing the likelihood of repeated EA participation with the same partners.

The findings of this thesis suggest that the proximity of party size to the highest electoral threshold significantly influences EA participation. The ideal scenario appears to be when parties are close, but not too close, to the threshold, balancing the potential for independent success against the benefits of alliances. Developing a variable to measure this proximity would be an important step for future research. Additionally, investigating the ideal distance

from the threshold that maximizes EA participation likelihood would enhance our understanding of strategic party behavior within the multilevel electoral context.

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Appendix

Appendix A: Correlation plot

Table A1: is a correlation plot to further explore the correlation between the different variables. I only include the independent variables.

Table 8: Correlation plot

Variables	Highest threshold in national elections by regions (highest threshold)	Party's vote share in the previous national election in the region (party size)	Party's EA participation in the previous regional election	Number of EA partners in the EA in the previous regional election
Highest threshold in national elections by regions (highest threshold)	1			
Party's vote share in the previous national election in the region (party size)	0.09684302	1		
Party's EA participation in the previous regional election	-0.06643013	0.03181479	1	
Number of EA partners in the EA in the previous regional election	-0.06738868	0.03225572	0.98155919	1

Appendix B: Heteroscedasticity

Figure B.1: Heteroscedasticity with DHARMa in R from Full model B in Table 6.1

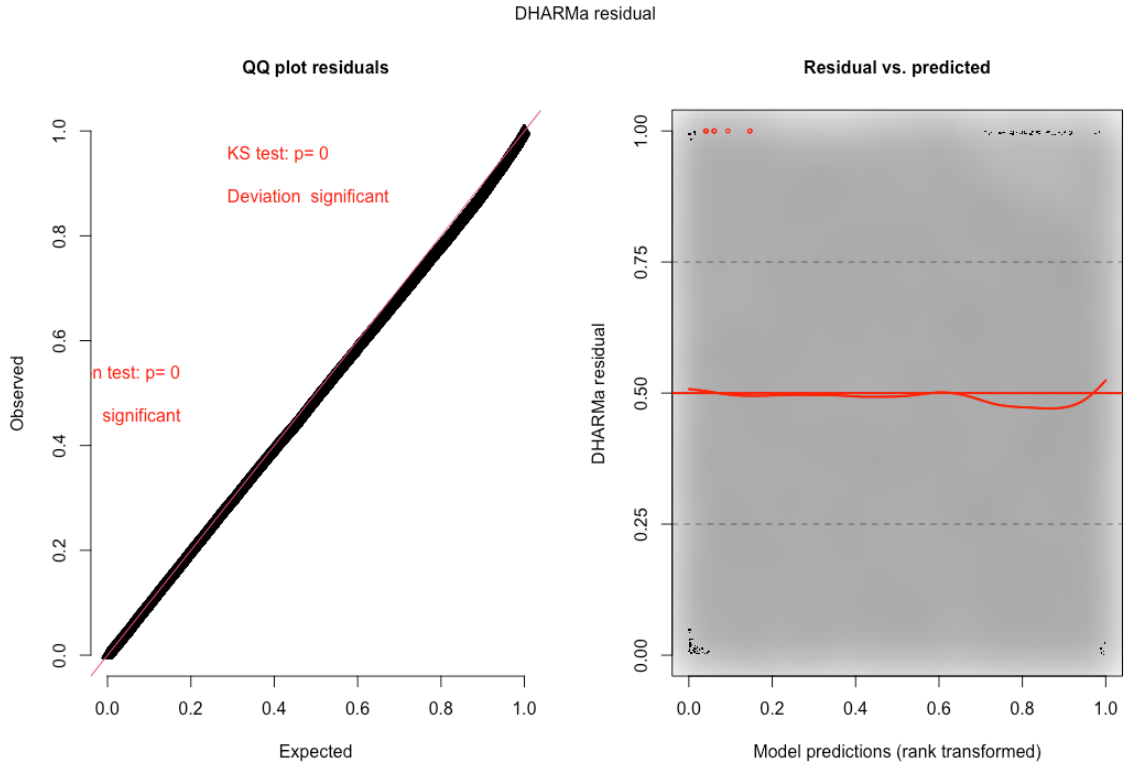


Figure B2: Heteroscedasticity with DHARMa in R from Full model A in Table 6.5

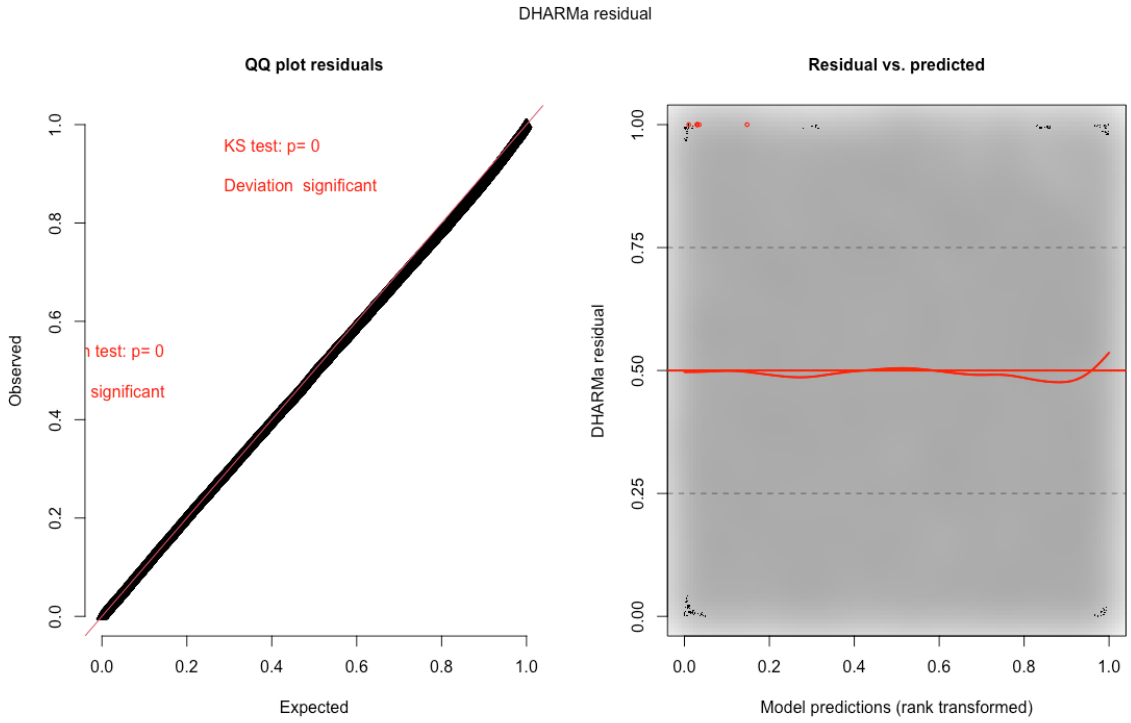
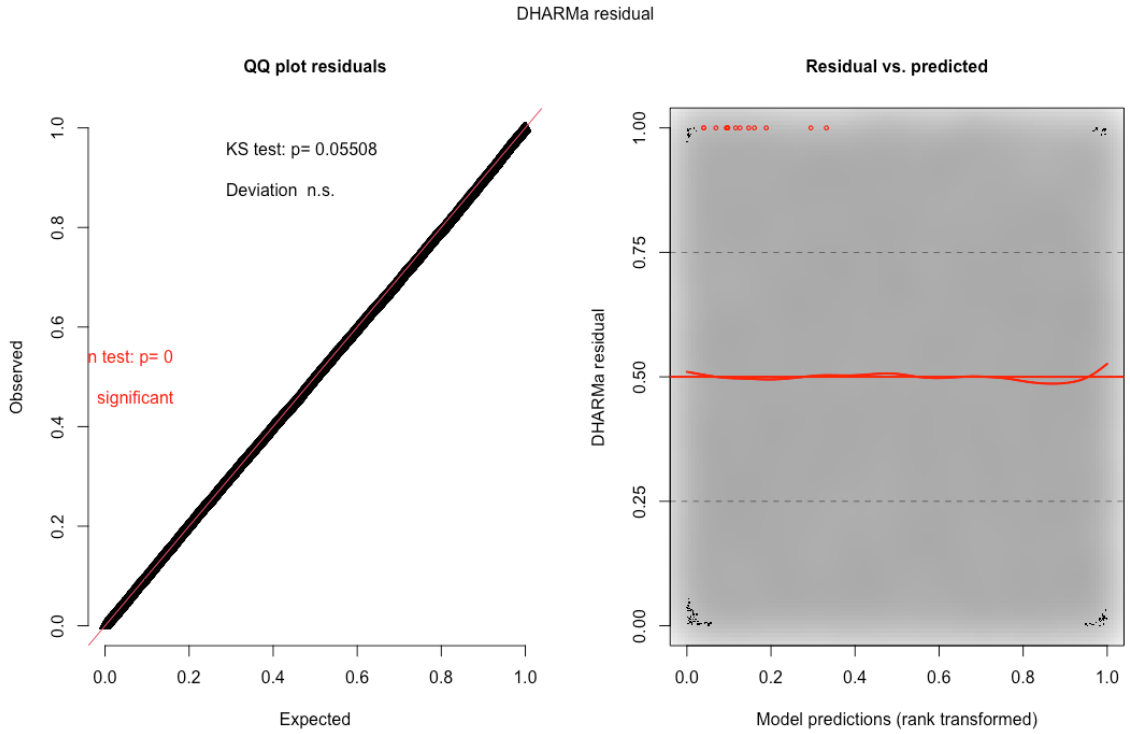


Figure B3: Heteroscedasticity with DHARMa in R from Full model B in Table 6.5



Appendix C: Robustness analyses

Table C1: Models without parties with 0 in party size. Testing H3, H4, and H5.

	H3		H4		H5	
Main variables	Coef.	SE	Coef.	SE	Coef.	SE
Highest electoral threshold	2.751	2.791	-1.034***	0.001	-2.677	2.857
Party size	-1.312	4.316	-1.158***	0.001	-5.984	4.334
Party Size^2	0.914	2.584	-0.153***	0.001	1.838	2.531
Highest electoral threshold*Party Size	2.367	6.179	2.267***	0.001	9.468	6.182
Highest electoral threshold*Party Size^2	-1.618	3.628	-0.491***	0.001	--3.984	3.359
Regional EA participation			-1.174***	0.001		
Regional EA party count					7.108**	2.476
Control variables						
Prev. EA participation	7.750*	3.729	5.655***	0.001	8.814*	4.079
ENP	1.936***	0.552	0.866***	0.001	1.125*	0.451
Year	0.013	0.043	-0.021***	0.000	-0.034	0.034
Country fixed effects (Belgium as base)						
Finland	0.215	6.541	-2.065***	0.001	-9.962	5.093
Germany	-19.614	3606.108	8.007	27.290	-65.702	1669395
Greece	-5.345	2.957	0.188***	0.001	-2.398	2.643
Italy	-5.216*	2.488	0.761***	0.001	-0.918	2.158
Norway	-7.723**	2.720	-0.264***	0.001	-3.329	2.431
Portugal	-6.115	3.159	0.379***	0.001	-0.955	2.664
Spain	-2.317	2.710	2.954***	0.001	1.301	2.388
Sweden	-9.410**	3.137	-1.072***	0.001	-2.976	2.568
Switzerland	-43.454**	13.218	-59.615***	10.435	-15.344	10.330
Intercept	-41.326	84.807	29.422***	0.001	57.184	66.707
Model statistics						
ICC (elections)	0.978		0.967		0.967	
ICC (regions)	0.002		0.000		0.000	
AIC	1754.4		1821.5		1810.7	
BIC	1914.0		1989.1		1978.3	
Pseudo-R^2	0.989		0.993		0.992	
Variance elections	163.93		97.65		96.64	
Variance regions	0.346		0.012		0.002	
N (elections)	3049		3049		3049	
N (regions)	226		226		226	
Total N	21611		21611		21611	

Significance Codes: *** <0.001; ** <0.01; * <0.05.

Table C2: Models with country as random instead of fixed effect. Testing H3, H4, and H5.

	H3		H4		H5	
Main variables	Coef.	SE	Coef.	SE	Coef.	SE
Highest electoral threshold	-0.451	0.365	-0.498	0.367	-0.355	0.367
Party size	4.001***	0.769	2.895***	0.782	3.435***	0.771
Party Size^2	-2.802***	0.578	-2.054***	0.584	-2.438***	0.579
Highest electoral threshold*Party Size	1.473	0.757			1.973**	0.762
Highest electoral threshold*Party Size^2	-0.327	0.540			-2.443***	0.661
Regional EA participation			1.331***	0.148		
Regional EA party count					-0.662	0.543
Control variables						
Prev. EA participation	4.079***	0.118	4.005***	0.120	4.013***	0.120
ENP	0.840***	0.079	0.959***	0.084	0.969***	0.083
Year	-0.007*	0.004	-0.017***	0.005	-0.016***	0.004
Intercept	3.869	6.939	22.980*	9.661	20.319*	7.926
Model statistics						
ICC (elections)	0.364		0.360		0.863	
ICC (regions)	0.068		0.060		0.001	
ICC (countries)	0.409		0.429		0.293	
AIC	11156.7		11082.0		11092.9	
BIC	11260.5		11194.4		11205.3	
Pseudo-R^2	0.858		0.867		0.842	
Variance elections	7.475		7.815		7.833	
Variance regions	1.394		1.298		1.394	
Variance countries	8.405		9.310		5.175	
N (elections)	3366		3366		3366	
N (regions)	226		226		226	
N (countries)	10		10		10	
Total N	41997		41997		41997	

Significance Codes: *** <0.001; ** <0.01; * <0.05.