

**EFFECTS OF ELECTORAL INSTITUTIONS AND SOCIAL  
DIVERSITY ON PARTY SYSTEMS**

by  
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**EFFECTS OF ELECTORAL INSTITUTIONS AND SOCIAL  
DIVERSITY ON PARTY SYSTEMS**

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## ABSTRACT

### EFFECTS OF ELECTORAL INSTITUTIONS AND SOCIAL DIVERSITY ON PARTY SYSTEMS

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Heterogeneity, Duverger's Law

How do social heterogeneity and electoral system permissiveness influence party system size? Duverger's conditional hypothesis is one of the most prominent answers to this question. To test this hypothesis, in the second chapter, I conduct a cross-national analysis focusing on fixing the drawbacks of previous studies. The preliminary analyses in this chapter point out how these drawbacks can influence the findings. The main analyses test Duverger's hypothesis by using data at the appropriate aggregation level and introducing an a priori agnostic measure of social diversity. Our findings make us more confident that Duverger's hypothesis finds empirical support. The subsequent chapter, which focuses on the six general elections between 2002 and 2018 in Turkey, delves deeper into the mechanism behind Duverger's hypothesis. It is shown that despite the 10 percent nationwide threshold, the mechanical effect of electoral district permissiveness is present, depending on the electoral geography and election year. Moreover, the findings demonstrate that the threshold, by forcing parties to maximize their national vote share, prevent Duverger's assumed district-level strategic rationality to hold. Furthermore, we see that in the absence of such a nation-level constraint, Kurdish nationalist parties in the 2007 and 2011 elections implemented an electoral strategy in line with the district-level rationality assumed by Duverger, but a similar behavior on part of those parties' supporters is not observed.

## ÖZET

### SEÇİM KURUMLARI VE TOPLUMSAL ÇEŞİTLİLİĞİN PARTİ SİSTEMİNE ETKİLERİ

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Çeşitlilik, Etnik Çeşitlilik, Duverger'nin Kanunu

Toplumsal çeşitlilik ile seçim sisteminin serbestliği parti sisteminin büyüklüğünü nasıl etkiler? Duverger'nin koşullu hipotezi, bu soruya verilen önemli cevaplardan biridir. İkinci bölümde, bu hipotezi test etmek için gerçekleştirilen geçmiş çalışmalardaki hataların düzeltilmesine odaklanılmıştır. Bu bölümün başındaki ön çalışmada bu hataların ortaya çıkarılabileceği sorunlara değinilmiştir. Bölümün esas analizinde ise doğru seviyede veri kullanarak ve toplumsal hatlardan birini öncelleyen bir çeşitlilik ölçütünü benimseyerek, Duverger'nin önermesine daha güvenilir bir ölçüde ampirik destek bulunabildiği gösterilmiştir. Türkiye'de 2002 ve 2018 arasındaki altı genel seçime odaklanan sonraki bölümde Duverger'nin önermesinin ardında yatan mekanizma yakından incelenmiştir. Bu bölümde, oyların meclisteki sandalyelere dönüşümü sürecinde, yüzde 10 barajının etkisine rağmen, seçim bölgesinin serbestlik seviyesinin mekanik etkisinin, seçim coğrafyasına ve yılına da bağlı olarak, mevcut olduğu gösterilmiştir. Bunun yanında, seçim barajının, oy oranlarını ülke çapında maksimize etmeye zorlamasından dolayı, Duverger'nin önermesinde varsayılan seçim bölgesi düzeyindeki stratejik rasyonelitenin hayata geçmesini önlediği ortaya çıkmaktadır. Ayrıca, seçim barajı kısıtlamasının önüne geçildiği 2007 ve 2011 seçimlerinde Kürt milliyetçisi partiler seçim-bölgesi düzeyinde varsayılan rasyoneliteye paralel hareket ettikleri görülürken, benzer bir stratejik davranış bu partilerin seçmenleri seviyesinde gözlemlenmemiştir. Son olarak, incelediğimiz bu etkileşimli ilişkilerin her birinin üçlü bir coğrafi ayrımdan etkilendiği görülmektedir.

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*To my family.*

## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>iv</b>
<b>ÖZET</b> .....	<b>v</b>
<b>LIST OF TABLES</b> .....	<b>x</b>
<b>LIST OF FIGURES</b> .....	<b>xi</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2. Social Heterogeneity, Electoral System Permissiveness, and Party System Size</b> .....	<b>5</b>
2.1. Introduction .....	5
2.2. Literature Review .....	6
2.2.1. Social Origins of Political Parties .....	6
2.2.2. Electoral Institutions as Determinants of Party System .....	8
2.2.3. Social Heterogeneity, Electoral Institutions, and Party System Size.....	10
2.3. Theoretical Framework .....	13
2.3.1. Level of Aggregation .....	14
2.3.2. Measuring Social Heterogeneity .....	15
2.3.3. Modeling Social Heterogeneity’s Effect on Party System Size..	17
2.4. Data and Measurement .....	18
2.4.1. Dependent Variable: Effective Number of Parties.....	18
2.4.2. Independent Variables.....	19
2.5. Preliminary Analyses .....	22
2.5.1. Estimation Strategy .....	22
2.5.2. Empirical Analysis and Findings .....	23
2.6. Main Analysis.....	26
2.6.1. Estimation Strategy .....	27

2.6.2. Empirical Analysis and Findings .....	27
2.7. Discussion and Conclusion .....	30
<b>3. Ethnic Heterogeneity, District Magnitude and The Transformation of the Party System in Turkey .....</b>	<b>34</b>
3.1. Introduction .....	34
3.2. Literature Review .....	35
3.2.1. Evolution of the Party System in Turkey .....	35
3.2.2. A Review of Kurdish Electoral Politics in Turkey .....	39
3.3. Theoretical Framework .....	41
3.3.1. Institutions Matter .....	42
3.3.2. Geography Matters .....	46
3.4. Data and Measurement .....	50
3.4.1. Independent Variables .....	50
3.4.2. Dependent Variables .....	52
3.5. Empirical Analyses and Findings .....	52
3.5.1. Mechanical Modifying Effect .....	52
3.5.2. Strategic Modifying Effect .....	60
3.5.3. Kurdish Strategic Entry and Voting .....	64
3.5.3.1. Strategic entry decision .....	65
3.5.3.2. Strategic voting decision .....	66
3.6. Discussion and Conclusion .....	68
<b>4. CONCLUSION .....</b>	<b>70</b>
<b>BIBLIOGRAPHY .....</b>	<b>76</b>
<b>APPENDIX A .....</b>	<b>81</b>

## LIST OF TABLES

Table 2.1. OLS Estimates on the Effects of Electoral Institutions and Ethnic Heterogeneity on Party System Size (Country-level Analysis) . . . .	24
Table 2.2. OLS Estimates on the Effects of Electoral Institutions and Social Heterogeneity on Party System Size . . . . .	28
Table 3.1. OLS Estimates on the Effects of Effective Number of Electoral Parties and District Magnitude on the Effective Number of Legislative Parties . . . . .	54
Table 3.2. OLS Estimates on the Effects of Effective Number of Ethnic Groups and District Magnitude on the Effective Number of Electoral Parties . . . . .	61

## LIST OF FIGURES

Figure 2.1. Introducing Ethno-religious Crosscuttingness to Clark & Golder (2006) (Dependent Variable: Effective Number of Electoral Parties) (90% Confidence Level) .....	25
Figure 2.2. Marginal Effect of Social Heterogeneity on Party System Size   District Magnitude (95% Confidence Level) .....	30
Figure 3.1. Marginal Effect of the Effective Number of Electoral Parties on the Effective Number of Legislative Parties   District Magnitude (Logged) (90% Confidence Level) .....	55
Figure 3.2. Marginal Effect of the Effective Number of Electoral Parties on the Effective Number of Legislative Parties   District Magnitude by Election (90% Confidence Level) .....	56
Figure 3.3. Marginal Effect of the Effective Number of Electoral Parties on the Effective Number of Legislative Parties   District Magnitude (2002 Elections Excluded) (90% Confidence Level) .....	59
Figure 3.4. Marginal Effect of Ethnic Heterogeneity on the Effective Number of Electoral Parties   District Magnitude (90% Confidence Level) .	63
Figure 3.5. Marginal Effect of Ethnic Heterogeneity on the Number of Independent Candidates Aligned with Kurdish Parties (90% Confidence Level) .....	66
Figure 3.6. Marginal Effect of Ethnic Heterogeneity on the Independent Votes/Total Votes Ratio (90% Confidence Level) .....	67
Figure A.1. Marginal Effects for Low Ethnoreligious Corsscuttingness Sample (Israel and the Netherlands Excluded) .....	81
Figure A.2. Marginal Effects of Social Diversity on Party System Size   District Magnitude .....	82
Figure A.3. Marginal Effect of Social Diversity on Party System Size (Presidential vs. Parliamentary Systems) .....	82
Figure A.4. Binning Plot of Marginal Effects (Model 1) .....	83

Figure A.5. Binning Plot of Marginal Effects (Model 2) ..... 83

Figure A.6. Binning Plot of Marginal Effects - Social Heterogeneity (Model  
3) ..... 84

Figure A.7. Binning Plot of Marginal Effects - Square of Social Hetero-  
geneity (Model 3) ..... 84

## 1. INTRODUCTION

Leaving aside the discussions on “why parties?” per se, political parties are supposed to act as the representatives of the represented in modern democracies (Aldrich et al. 1995). In this regard, a higher number of parties generally means a better representation of more diverse groups and ideological or policy demands. Similarly a higher number of legislative parties often leads to governments and policies that are more responsive to deliberative democratic processes (Powell 2000). Furthermore, the extent of party system fragmentation not only influences party politics, but also shapes how voters cast their vote Cox (1997). While this list is far from being exhaustive, my point should be clear. From the ballot-box to the cabinet, the number of parties influences political decisions at every stage of democratic politics.

Since the number of parties matters to a great deal for democratic representation, the determinants of party system size have been subject to scientific inquiry since at least the middle of the 20<sup>th</sup> century. Maurice Duverger, in his seminal work (1959), puts forward that in simple majority (or plurality) systems, the number of parties would be two. In other words, single member district systems lead to two-party systems. This proposition, dubbed as the Duverger’s law, has been subject to great scientific scrutiny ever since. As Riker (1982) succinctly explains, Duverger did not restrict himself to SMD systems, but he also suggested that, in proportional representation systems, it is more likely to come across multipartyism. Almost half a century later, the M+1 formula was introduced in a formal account to describe these institutional influences (Cox 1997, 271). According to Cox (1997), in the equilibrium condition, the number of parties would be one more than the available seats in a district (M).

While this institutionalist approach has its own history, other scholars studied sociological and historical factors that have led to the formation of party systems. Most prominently, Lipset and Rokkan (1967) present a historical account of the emergence of party systems in Western European societies with an emphasis on their cleavage structures. According to this sociological approach, cleavages are the fault

lines of conflict in a society. These lines of conflict, through several stages, translate into alignments that ultimately translate into political parties. While the study was originally concerned with the historical trajectory of Western Europe, the cleavage structure argument has been widely applied to other parts of the world as well.

It did not take much time for these two strands of literature, which we can refer, in turn, as institutionalist and sociological approaches, to meet each other. For example, Powell (1982) examined the combined effects of electoral institutions and socio-demographic characteristics on European party systems. However, the beginning of a more scientifically rigorous research agenda on the joint effects of district magnitude and social structure dates to early 90s, when Ordeshook and Shvetsova (1994) examined the interactive effects of ethnic heterogeneity and district magnitude on party system size. The interactive effects of district magnitude and ethnic heterogeneity on party system size have since been studied by numerous scientific articles. While these empirical studies did increase our knowledge on the subject, the main question they have long asked has yet to be satisfactorily answered. These past studies suffer from theoretically driven methodological problems. In order to further our understanding on this topic, several aspects of these studies have been waiting to be improved. These improvements range from the aggregation level of the data to a more sophisticated modeling of the relationship between social groups and party system size.

As admitted by previous studies as well (e.g., Ordeshook and Shvetsova 1994, 86), while previous studies employed country-level data to address the question, the theoretical expectations that have been tested require employing of district-level data. Thus, an important step to be taken in this literature would be to employ district instead of country-level data. Another crucial improvement that would increase our understanding of the topic is to take cleavage dimensions other than ethnicity into account while assessing social structure's effect on the party system size. Lastly, previous studies assume a linear relationship between the number of social groups and that of parties. However, more recent studies suggest and demonstrate that this relationship might be curvilinear. As such, incorporating these theoretical expectations in to better empirical models can help improve the validity of our findings and our understanding of the party system phenomenon.

This thesis comprises of two empirical chapters. In the first empirical chapter, I attempt to address the above-mentioned problems by employing a cross-national dataset that consists of district-level observations. Moreover, in Chapter 2, I do not prioritize ethnic heterogeneity over other cleavage dimensions. Following Potter (2018), I argue that if the goal is to examine how the overall fragmentation of a

society is reflected on its party system, measuring latent social diversity is a more appropriate approach than focusing only on ethnic heterogeneity. Lastly, following Stoll (2008) and Milazzo, Moser, and Scheiner (2018), I introduce a more nuanced approach to modeling the relationship between the number of social groups and party system size. Moreover, in this chapter, I attempt to show that most prominent studies that use country-level data in the literature are model dependent, and the findings can be significantly altered with the inclusion of potentially omitted variables. Thus, our attempt to fix the drawbacks is beyond a simple exercise of showing what we already know.

In the second empirical chapter of this thesis, I examine the district-level party system fragmentation in Turkey. The magnitude of the districts in Turkey ranges from 1 to 35. Moreover, the large Kurdish minority population is heterogeneously distributed among these districts. This variation in the districts' magnitude and the heterogeneous geographical concentration of a large minority group allow us to examine the interactive effects of district magnitude and ethnic heterogeneity on the party system size in Turkey. By employing a novel dataset that comprises of the legislative election outcomes and ethnic heterogeneity at the district-level, I test several hypotheses that have been posited in previous literature. In addition, I also show how and why Turkey's specific institutional characteristics (i.e., the 10% nationwide threshold) require further theorizing and statistical modeling that incorporate concerns beyond district-level electoral competition. Lastly, I argue and demonstrate that the cleavage dimensions in Turkey have geographical implications leading to the emergence of different party systems and that these differences also reflect themselves on the joint effects of ethnic heterogeneity and district magnitude on the party system size.

The empirical analyses in this chapter are, to the best of my knowledge, the first studies that engage with Duverger's conditional hypothesis in the Turkish context. Therefore, many parts of this chapter reach results that can be developed further in future research. By virtue of its exploratory approach, the findings in this chapter must be considered as descriptive evidence pointing to associations between the variables of interest. The Turkish context, thanks to abrupt institutional changes, can provide researchers to better understand the causal mechanisms behind these associations. For instance, as this chapter shows that the 10% nationwide electoral threshold offsets the district-level logic assumed by Duverger's hypothesis, future research can attempt to causally identify how the introduction of the 10% nationwide threshold had influenced the relationship between ethnic heterogeneity and party system from a potential outcomes framework.

In addition to the theoretical contributions, this thesis has several findings with policy-relevant implications. For example, with the introduction of the new alliance law in 2018, which makes considerations about passing this threshold irrelevant for parties that are part of electoral alliances which can pass the 10% threshold, it might be reasonable for politicians to focus their attention to electoral geographies where they have traditionally been stronger. As such, with this relatively new development in the electoral system, we might observe a lower level of nationalization in the party system and a higher level of pork-barrel politics. In addition, the findings in the chapter focusing on Turkey also reveal that voters are prone to failing to coordinate in circumstances of high party fragmentation and economic turmoil (as during the 2002 elections) or when they vote under institutional conditions that are rather new (as in the 2007 and 2011 elections for the supporters of the Kurdish party that participated in the elections with independent candidates), suggesting that informing their supporters of the implications of their electoral strategies should not be disregarded if parties want to succeed in their adopted strategies.

This thesis is organized as follows: The next chapter is the first empirical chapter in which a cross-national analysis of the interactive effects of district magnitude and social heterogeneity on party system size is examined. In Chapter 2, after a review of the literature and an in-depth discussion of the theoretical and methodological drawbacks of previous research on the topic, I provide a first-step analysis to demonstrate how the incorporation of other cleavage dimensions can change our findings. Following this, the main analysis aims to improve both the data, measurement, and modeling. In Chapter 3, again, after a review of the literature and a theoretical discussion, I study the interactive effects of ethnic heterogeneity, district magnitude, and electoral geography on party system size in Turkey. I conclude both chapters with the discussions of the theoretical implications of the presented findings, drawbacks of the empirical analyses, and recommendations for future research. At the concluding chapter, I summarize the main findings of the two empirical chapters and elaborate more on how they contribute to our knowledge of the interplay of institutional and sociological factors in determining the number of parties in a party system.

## 2. SOCIAL HETEROGENEITY, ELECTORAL SYSTEM PERMISSIVENESS, AND PARTY SYSTEM SIZE

### 2.1 Introduction

Reflecting the various implications of the topic, scholars of electoral politics have long studied different aspects of the party system. These aspects range from explaining the relationship between party system and voter/elite coordination (Cox 1990) to analyzing how the number of parties influences the responsiveness of governments (Powell 2000). In this study, we focus on an established topic within this broader literature: determinants of party system size. As parties are *sine qua non* for modern-day politics, the importance of explaining how they proliferate is almost self-explanatory.

For several decades, party system size has been a topic of inquiry in and on itself. Early scholarship introduced two very fruitful points of view to the study of the number of parties. The first strand puts forward social diversity as the main explanatory factor. This sociological approach argues that the number of parties is a product of the cleavage structures in a society (Lipset and Rokkan 1967). The second approach, however, emphasizes institutional determinants (Duverger 1959). More specifically, studies with an institutionalist approach point to electoral institutions as being primarily responsible for the number of parties. In this strand of research, it is argued that the institutional context provides elites and voters with incentives to strategically coordinate (Cox 1994).

Somewhat more recent research argues for a third way. According to this third way, neither all social groups automatically translate into a political party nor electoral institutions can shape politics single-handedly. Thus, they argue that it is the interactive effect of these two determinants that lead to the formation of a party system (e.g., Powell 1982; Ordeshook and Shvetsova 1994; Clark and Golder 2006). More specifically, it is argued that the institutions play a moderating role when

social cleavages produce parties. While this latest strand of research advanced our understanding of how the size of a party system is determined, it suffers from several shortcomings. These drawbacks range from insufficient data to misspecification of models and faulty or insufficiently developed operationalizations of variables of prime importance.

In the last two decades, several scholars pointed out these problems and introduced solutions (Clark and Golder 2006; Stoll 2008; Potter 2014; Lublin 2017; Milazzo, Moser, and Scheiner 2018 ). These solutions encompass issues of using more appropriate data to better operationalization of the constructs. In this research, I attempt to contribute to this discussion by proposing three improvements in modeling the relationship between social diversity, electoral institutions, and party system size. First, I introduce a new variable of crosscuttingness as a complimentary measure of social diversity, which can significantly alter our findings. Then, I share my findings of an empirical analyses which employs a constituency-level dataset that has 871 electoral districts from thirteen European democracies covering a period between 1996 and 2011.

## **2.2 Literature Review**

In this section, I review the extant literature on the determinants of party system size. This section has three parts. First, there is a discussion on the studies which emphasize sociological factors. Then, I review the literature that emphasizes the ways in which electoral institutions shape the party system. Lastly, I focus on the lengthy literature that puts forward the moderating role of electoral institutions in the relationship between social diversity and the number of parties.

### **2.2.1 Social Origins of Political Parties**

The literature on the sociological origins of political parties has been significantly influenced by Lipset and Rokkan's (1967) seminal work titled "Cleavage Structures, Party Systems, and Voter Alignments." As the title hints, the main argument of this study is that party systems are products of the cleavage structures in society. More specifically, the latent cleavages of conflict in society lead to different configurations of alignments, in return, these alignments reflect themselves as different party fam-

ilies. Thanks to the formation of parties that freeze these cleavages, competitive multiparty democracies manage to remain stable polities.

Lipset and Rokkan (1967) provide support for their argument with a historical account of the formation of party systems in Western European societies. In their historical account, they periodize the early modern and modern experience of Western Europe into two separate, but often interacting, processes. Chronologically (and theoretically) the first one of these processes is the process starting with the so-called national revolution. To be more precise, this national revolution, consists of two developments. The first one of these developments is the Reformation, which paved the way for the cleavage between the increasingly powerful nation state and the church. The second development is the democratic revolution of 1789, which exacerbated the struggle between the state and the church but also made the conflict between state's centralizing force and ethnic, religious, or linguistic groups resisting against this centralization aspirations more salient.

The second revolution in this periodization that shaped the social structure of Western European societies is the industrial revolution. The first cleavage emerging from this world historical development is between the landed interest and the newly emerging industrial entrepreneurs. The second cleavage emerging in the aftermath of the industrial revolution is between the workers and the employers or between the property owners and the tenants and laborers. As Lipset and Rokkan (1967) put great emphasis, even though these events took place in many parts of Western Europe, the constellations of different cleavages within different axes are a result of separate historical paths leading to similar but different party systems to emerge in different polities. For a cleavage to translate into a political party, groups at one side of these cleavages must satisfy several thresholds like legitimation, incorporation, and representation. As such, not all conflict lines in a society automatically project themselves into the party system.

Lipset and Rokkan (1967) conclude their historical account at 1920s, arguing that the party system in 1960s still reflects the cleavage structures dating back to the interwar period. After all, parties enable stability through this freezing process. However, in his 1977 book, Inglehart argues that Western societies are experiencing a third, but this time silent, revolution. This so-called silent revolution, just like the national and industrial revolutions did, create new cleavages within society. According to Inglehart (2015), there had been a generational change in the value structure of societies. While older generations, who were born during the interwar or post-war periods, prioritize security and generally have more authoritarian political attitudes, later generations emphasize self-expression, autonomy, and individualism.

Inglehart (2015) argues that this generational shift from materialist to post-materialist values is mostly a product of relatively greater economic security which later cohorts experienced. Combined with a socialization effect that reinforces the prominent values within cohorts, generational differences become salient. While Inglehart's variant of the modernization theory which links better economic conditions with liberal values is still open to further discussion, his arguments suggesting that generation is an important predictor for political outlook is supported by many national and cross-national research projects including his own World Values Survey (1981-2020).

The emergence of this new value cleavage along generational lines is reflected in the gradual increase in the prominence of parties both advocating less conventional post-materialist concerns like the environmental or LGBTQI+ rights and more authoritarian, and populist ideological positions at the other side of the spectrum (Norris and Inglehart 2019). As Lipset and Rokkan (1967) had emphasized rightfully, it takes time and several thresholds for alignments at different sides of a cleavage to become an integral part of a party system.

### **2.2.2 Electoral Institutions as Determinants of Party System**

The argument that electoral institutions have an impact on the way democratic politics are conducted has been supported by an established literature. As the earliest systematic study on how electoral laws (e.g., electoral formula, district magnitude, and ballot structure) affect the characteristics of politics, including but not limited to the party system size, Rae's (1967) seminal work can be given as an important milestone in studying this topic. However, this strand of scholarship can be extended back at least to Duverger's (1959) study which led to his proposition, which is famously known as the Duverger's law.

According to Duverger's law, the plurality rule in elections favors a two-party system (Riker 1982). As put forward by Riker (1982), Duverger also adds that the simple majority system with second ballot and proportional representation systems favor multipartyism. As Riker emphasizes in his analysis of Duverger's law and hypothesis, Duverger makes an almost deterministic claim with regards to the effect of plurality electoral systems leading to a two-party system whereas his proposition about the other two election systems is probabilistic. According to Rae (1967) putting forward such a deterministic proposition does not accurately reflect the relationship between plurality systems and the number of parties. Therefore, he puts forward a revised

version of the proposition which emphasizes the probabilistic nature of this claim.

Duverger (1959) suggests that the mechanisms which lead to this effect of plurality systems are twofold. First, there is the mechanical effect, which is the process in which votes are translated into seats. In plurality systems where only one party or one candidate becomes the victor, the disproportionality remains high. In other words, the translation of votes into seats is far from reflecting the vote shares. Second, there is a psychological effect, which is itself a product of the mechanical effect. This psychological effect leads voters to not vote for options that do not have a chance to win the electoral race. As such, in a plurality system, voters are incentivized to vote for parties that have a chance to receive the plurality of all valid votes. This leaves third parties in a disadvantageous position and leads to a two-party system. These two mechanisms assume instrumentally rational actors (i.e., parties and voters) who behave strategically (Cox 1997).

Several studies had expanded the discussion on strategic voting (e.g., Myerson and Weber 1993; Cox 1984). Among many studies, Cox's 1994 article which formed the basis of his 1997 book, titled "Making Votes Count" has been particularly influential. He provides a formal account of how the single non-transferable vote systems shape party system size through the strategic behavior of the voters and parties. In his model, Cox (1997) puts forward three assumptions which he argues that Duverger (1959) was implicitly assuming as well. First, as mentioned previously, is the instrumental rationality of the players. This assumption suggests that voters, instead of voting with expressive concerns or casting a sincere vote, behave rationally. Similarly, the candidates decide to enter in an electoral competition based on the cost-benefit calculations, which is also a function of the probability of winning any seats.

The second assumption is that the players have short term strategies. In other words, the players are primarily concerned with the results of the upcoming election. Therefore, in this model, politicians do not invest in future elections by expressing their commitment to an ideology through taking part in races which they expect lose. This brings us to the third assumption; players have rational expectations about the winner of the elections. In this model, both candidates and voters have a rough sense of what the actual condition of the vote distribution would be like. With these three assumptions, Cox (1997) brings a straightforward formula of the number of candidates that would emerge depending on the number of available seats. The number of candidates that would enter the race anticipating the strategic behavior of the voters would be one more than the available seats. For example, in the equilibrium condition, if there is a single member district (i.e., plurality elections),

the number of candidates in that district running for office will not surpass two, providing that all actors behave rationally with the above assumptions. While there are many factors that prevent voters and candidates to correctly predict what will happen in elections, Cox's formal account helps us understand how electoral systems, in particular the district magnitude, affects party system size.

Other electoral institutions that affect the incentive structure of voters have also been studied widely (e.g., Rae 1967; Lijphart 1984, Cox 1990, Powell 2000). A non-exhaustive list of these institutions can be the following: the electoral formula, the number of votes each voter is allowed to cast, legal thresholds, the existence of upper tiers (Cox 1990). These institutions have been put under scientific investigation from various frameworks. For example, while Powell (2000) categorize them as being either part of a majoritarian or proportional vision, (Cox 1990) puts forward a conceptualization that categorizes these institutions as either centripetal or centrifugal. Now that we have covered the main propositions of the two literatures which form the basis of the topic in question, we can move forward by reviewing the extant literature on the interactive hypothesis that combines these two approaches.

### **2.2.3 Social Heterogeneity, Electoral Institutions, and Party System Size**

After the development of the sociological and the institutional explanations on the party system size, several studies put forward that electoral institutions and social structure interactively affect the number of parties (Powell 1982; Ordeshook and Shvetsova 1994; Neto and Cox 1997; Filippov, Ordeshook, and Shvetsova 1999; Mozaffar, Scarritt, and Galaich 2003; Clark and Golder 2006; Mylonas and Roussias 2008; Lublin 2017). As the richness of the literature suggests, the topic has not been easily settled.

Prior to studies that incorporated the theoretical suggestions of the interactive effects of electoral institutions and social heterogeneity, there are studies which put strong emphasis on both of these determinants. Powell (1982), by taking into consideration Lipset and Rokkan's (1967) study on the social cleavages in Europe, argues that in addition to the electoral system, social characteristics such as the proportion of urban and rural residents, catholic minorities, and the ethnic structure would affect the party system fragmentation. Similarly, Shugart and Taagepera (1989) take social cleavage structures into account by employing Lijphart's (1984) issue dimensions when estimating the effect of electoral systems on party system. However, these studies do not exclusively concern themselves with district magnitude

as a distinct electoral institution, and their estimation and measurement strategies in addition to several of their operationalizations of constructs are problematic (see Ordeshook and Shvetsova 1994; Neto and Cox 1997). Initially, in their empirical analysis which covers established democracies, Ordeshook and Shvetsova (1994) investigate how one particular electoral institution, namely the district magnitude plays a moderating role in the relationship between ethnic diversity and the number of parties. Their conclusion is that the district magnitude is especially important in determining the number of parties when ethnic heterogeneity is high. But for the district magnitude to have a significant effect on the number of parties when ethnic heterogeneity is low, it must be especially large. Lastly, they demonstrate that the number of parties is not affected by ethnic heterogeneity when district magnitude is equal to one.

Following Ordeshook and Shvetsova's (1994) account, Neto and Cox (1997) contribute to the literature by analyzing a larger dataset with a similar estimation strategy. Moreover, they provide a three-stage theoretical explanation that puts heavy emphasis on the role of social structure in shaping the party system size. They also incorporate presidential elections into their explanation. According to their theoretical explanation, it is first the social cleavages that translate into partisan preferences, then the partisan preferences translate into votes, and lastly, the votes translate into seats while presidential elections, through the number of presidential candidates, depending on the proximity to the following legislative election, also have an effect on the party system. They place this explanation to the opposite of what they claim as Duverger's approach towards social structure as a mere residual error while electoral institutions determine party system size.

In further studies (Filippov, Ordeshook, and Shvetsova 1999; Mozaffar, Scarritt, and Galaich 2003; Mylonas and Roussias 2008), the role played by social cleavages and electoral institutions on shaping the party system is analyzed in emerging democracies. As Filippov, Ordeshook, and Shvetsova (1999) note, in newly established democracies we cannot assume the same informational environment that shapes the expectations of voters and politicians in established democracies. As such, they indeterminately conclude that in new democracies the number of parties in a polity is mostly affected by its electoral institutions whereas the role of social diversity is less prevalent. In contrast, Mozaffar, Scarritt, and Galaich (2003) theorize that due to the lack of experience with democratic politics, it is oftentimes the ethnic structure which informs alignment structures in young democracies. Thus, in new democracies, ethnic heterogeneity substantially affects party system size under certain conditions. Another contrasting finding between these two studies is that while the former ascribes a proliferating role to presidential elections, the latter claims

the opposite. In a similar vein, Mylonas and Roussias's 2008 study demonstrates that any interactive effect of electoral institutions and ethnic heterogeneity on the number of parties is conditional on the regime type.

Mozaffar, Scarritt, and Galaich (2003), in their study of African democracies, note that ethnicity is not a priori defined but constructed. This constructivist perspective makes them focus only on ethnic groups that are politically relevant. More precisely, Mozaffar and his colleagues (2003) concern themselves with the politically relevant ethnic or linguistic groups when operationalizing ethnic heterogeneity. As such, instead of only examining ethnopolitical fragmentation, they analyze the role of ethnopolitical concentration as well. Because, ethnic groups become politically relevant entities only when they are sufficiently concentrated. Contrary to previous studies, they find that ethnic heterogeneity by itself reduces the number of parties because forming a party becomes nonviable when there are too many small groups. However, when this heterogeneity is accompanied with ethnic concentration the number of parties would proliferate because ethnic groups will become politically relevant in the sense that they will be able to form parties that would have a viable chance of winning the electoral race. While larger districts exacerbate these effects, geographically concentrated ethnopolitical groups do produce greater party system size even in small districts. Similarly, arguing that most of the previous literature had underestimated the effect of ethnic groups by including groups that are not politically relevant, Lublin (2017) demonstrates the importance of the theoretical assumptions in approaching to ethnicity.

In stark contrast to Neto and Cox's (1997) claim that Duverger (1959) takes social structure as an error term, Clark and Golder (2006) argue that Duverger's law does not give social heterogeneity a minor or residual role in the formation of party systems. On the contrary, they argue that Duverger (1959) recognized the effect of social diversity on the number of parties and theorized that electoral institutions play a moderating role in the process of translation of the cleavages into parties. This interpretation of Duverger's law and hypothesis (Riker 1982) suggests that the interactive hypothesis was already implicitly formulated by Duverger himself. Moreover, analyzing the interactive effect of district magnitude and ethnic heterogeneity from this framework implies that electoral institutions do not have an effect by themselves. Because, there is no such society that is absolutely homogeneous. In addition to these contributions, Clark and Golder (2006) introduce a more comprehensive dataset covering a large number of cases.

While the literature prior to Clark and Golder (2006) expanded our theoretical understanding of the role of district magnitude, ethnic heterogeneity, and presidential

elections in determining the number of parties in established and new democracies, as Clark and Golder (2006) lay them down, their erroneous model specifications and interpretations of the empirical analyses led them reach unwarranted conclusions. However, the following literature (e.g., Lublin 2017, Potter 2014) build their models with the caveats pointed out by Clark and Golder (2006). In the following section, I provide a more detailed discussion on the theoretical implications which recent literature have also contributed.

### 2.3 Theoretical Framework

The literature on the number of parties took an important step forward when the interaction hypothesis was proposed. Scholars who put forward this more nuanced theoretical account argue that the effects of sociological and institutional factors show themselves by interacting with one another (Ordeshook and Shvetsova 1994; Neto and Cox 1997; Filippov, Ordeshook, and Shvetsova 1999; Mozaffar, Scarritt, and Galaich 2003; Clark and Golder 2006). By fixing the misspecifications in previous studies (e.g., Mozaffar, Scarritt, and Galaich 2003) and introducing a more nuanced causal mechanism with respect to this interactive effect, Clark and Golder's (2006) study has been widely accepted as a near-definitive answer to this question. What (Clark and Golder 2006) demonstrate is that ethnic diversity does not increase the number of parties when the electoral system is non-permissive. When the electoral system is permissive, however, the effect of ethnic heterogeneity is higher in systems with more permissive electoral rules. According to (Clark and Golder 2006) this is what was proposed by Duverger (1959) in the first place. In other words, the authors claim that their study supports what Duverger had actually proposed in his seminal study.

While whether Duverger proposed a purely institutional or an interactive explanation is of secondary importance to us, more recent studies argue that Clark and Golder (2006) had its own problems. Ultimately, these problems led to misleading conclusions. Here, we can categorize these drawbacks in three groups: problems with the level of aggregation of the data, problems with regards to measuring social heterogeneity, and problems about the modeling of the relationship between social groups and the number of parties.

### 2.3.1 Level of Aggregation

Studies that first introduced the interactive hypothesis employed country-level data (e.g., Neto and Cox Neto and Cox (1997); Filippov, Ordeshook, and Shvetsova 1999; Mozaffar, Scarritt, and Galaich 2003; Clark and Golder 2006). However, both Duverger (1959) and Cox (1997) put forward a district-level dynamic when explaining the role of electoral institutions shaping the party system size. In other words, the theory behind the analyses expects a district-level variation whereas empirical studies had used national-level data. The theorized variation is district-level because it is argued that elites and voters form their respective strategic behavior based on their expectations of winning or losing a seat in a given district. More precisely, since the number of seats available in a district determines how many votes one has to get in order to gain any seats, voters vote for candidates who they think would surpass the necessary number of votes. According to this account, the voters are concerned about not wasting their votes, thus they strategically desert candidates whom they do not give a chance of passing the threshold of exclusion (Rae 1967). Similarly, since the candidates expect voters to vote with these considerations in mind, they strategically withdraw from or enter the electoral race (Cox 1997).

Note that there are two steps in which electoral institutions affect the seat allocation. First, there is the mechanical effect, where the district magnitude and the electoral formula result in the translation of votes into seats. This mechanical effect leads voters and candidates to form their actions in such a way that they do not waste their votes or resources. As Cox (1994) emphasizes clearly, there are several assumptions inherent in this conceptualization. First, the actors are instrumentally rational. Meaning that they act strategically based on cost and benefit analysis. Second, this strategic behavior is limited to the short-term, in other words to the next election. The third assumption is that actors have rational expectations about the support the candidates would receive, thus, who (other) voters would support.

Even though Duverger (1959) admits that these two effects are present only at the local level, he also suggests that the local level results project themselves into the national level due to increased nationalization of political issues and the centralization of party organizations. Leys (1959) argues that it is only natural to assume such a projection because when voters cast their vote, they are not concerned with which candidate in the local level wins the election, but it is the distribution of seats in the national parliament that matters most. Another explanation provided by Sartori (1986) for this local-to-national projection is that Duverger assumes mass parties that operate in most parts of the country (Cox 1997).

However, as Cox (1997) suggests, if nationalized mass parties are assumed for such a local to national level projection to occur, then it comes to explaining why nationalization happens in the first place. This is not something addressed by Duverger’s law or hypothesis. Therefore, it is safe to say that the logic put forward by Duverger (1959) and later by Cox (1997) are both district-level theories. While there are some studies on the cross-district coordination dynamics (Cox 1999; Potter 2018), the link between constituency- and national-level voter coordination and party nationalization are still topics understudied. Moreover, none of the studies in the “first wave” of the interaction hypothesis proposes an explanation justifying the use of national-level data to test a constituency-level theory.

It is not only that the data do not fit the theory being tested, but the use of national-level data might lead to other practical problems as well. For instance, a minority group can be geographically dispersed or concentrated, which cannot be captured by ethnic heterogeneity measure. Similarly, there might be different parties operating at different parts of the country, when added up, leading to a high number of parties. In such a case, the number of parties in the national level will misrepresent what is going on in individual districts (Milazzo, Moser, and Scheiner 2018). The main reason for this theory-data mismatch has been the difficulty to access data at the district level. For example, Ordeshook and Shvetsova (1994), being aware of the inherent drawbacks of using national-level data, suggest future research to employ constituency-level data. Despite having these drawbacks, studies utilizing country-level data still shed light on the direction of this interactive effect.

### **2.3.2 Measuring Social Heterogeneity**

An overwhelming majority of studies on this topic study the interactive effects of ethnic heterogeneity and electoral system permissiveness on party system size. While Ordeshook and Shvetsova (1994), Filippov, Ordeshook, and Shvetsova (1999), and Neto and Cox (1997) employ ethnic heterogeneity data since they consider ethnic heterogeneity as the most reliably measured cleavage, they admit that it is only one of the many dimensions of social diversity. On the other hand, Clark and Golder (2006) consider it as a proxy for overall social diversity in society. Most of the following studies (e.g., Mylonas and Roussias 2008; Lublin 2017) do not particularly discuss what pragmatic value they ascribe to ethnic heterogeneity and focus on operationalizing it in a more nuanced way.

Having a theoretical framework that approaches ethnic groups from a primordialist

perspective, earlier studies (e.g., Ordeshook and Shvetsova 1994; Neto and Cox 1997) use the so-called ethnolinguistic fractionalization index when calculating the effective number of ethnic groups with the following formula:

$$\text{Effective Number of Ethnic Groups} = \frac{1}{\sum_{i=1}^n g_i^2}$$

where  $g_i$  is the proportion of the population in ethnic group  $i$ . Clark and Golder (2006) apply the same strategy but use Fearon's (2003) index of ethnic fractionalization instead. Due to their constructivist approach to ethnicity, several studies (e.g., Mozaffar, Scarritt, and Galaich 2003; Lublin 2017) only take into account politically relevant ethnic groups hence claiming that ethnicity is not a trait exempt from the influence of the institutional context within which it operates.

While more recent studies underline that ethnicity might also be endogenous to political processes (e.g., Mozaffar, Scarritt, and Galaich 2003; Green 2011; Lublin 2017), another important problem with measuring ethnic heterogeneity is that other cleavage structures can also have strong impacts on how diverse society can be even when ethnic heterogeneity is held constant. For example, ethnicity and religion have been important cleavages that led to the emergence of different party families in Western Europe (Lipset and Rokkan 1967). Therefore, it is quite natural to come across different countries in which these two cleavages reinforce one another. Therefore, Selway (2011) puts forward a new crosscuttingness measure that shows the overlap between different cleavages in societies. Selway (2011) proposes the concept of crosscuttingness and a way to measure it. In his study, he also provides an example by showing how taking into consideration ethnoreligious crosscuttingness sheds further light on the way social structure affects economic growth. Selway (2011) defines crosscuttingness as a measure of independence between two cleavages in society. When there is total crosscuttingness, between, for example, religion and ethnicity, knowing one's ethnicity does not provide any information regarding their religion or vice versa. As such, greater crosscuttingness means less overlap between two cleavages which also means that different cleavages do not reinforce one another. The lower the crosscuttingness measure, the more different cleavages are expected to reinforce one another.

Most recently, however, scholars attempt to incorporate latent diversity measures into the study of social heterogeneity. These latent measures include several cleavages into the model and account for crosscuttingness or mutual reinforcement as well. In this regard, Potter (2018) suggests using a novel measure of social diversity with an a priori agnostic approach to society's cleavage structure. He uses Krippendorff's alpha, which is a measure of intercoder reliability mostly used in psychometrics. In

this study, I employ his dataset, generated through this novel approach. Therefore, in the following section I will explain how the measure is calculated and its relative advantages and drawbacks.

Previous studies (e.g., Ordeshook and Shvetsova 1994) admit that the use of ethnic heterogeneity does not reflect all social cleavages that a society's political structure might be influenced by. Other than Potter (2014), which employs a novel technique at measuring latent social diversity, this study is the first attempt that illustrates how incorporating other cleavage dimensions would improve our understanding of how social heterogeneity affects party system size.<sup>1</sup>

### **2.3.3 Modeling Social Heterogeneity's Effect on Party System Size**

Even though there remains a plethora of unanswered questions with regards to defining, measuring, and operationalizing ethnic heterogeneity, another question is on how to model the relationship between social heterogeneity and the effective number of parties. More specifically, an overwhelming majority of previous studies assume a linear relationship between ethnic heterogeneity and the number of parties, suggesting that higher number of groups will always increase the number of parties equally no matter how many groups there are. More sophisticated theories on the effect of social diversity on the number of parties suggest that there might be a reverse-U shaped relationship between these two phenomena (Stoll 2008).

These studies argue that after a certain number of groups in society, forming parties becomes unfeasible. Therefore, they theorize that very high numbers of groups can lead to a decrease in the number of parties. In other words, the relationship between social heterogeneity and party system size is argued to be curvilinear. Stoll (2008) and Raymond (2015) provide some evidence on the claim that there exists a curvilinear relationship between ethnic heterogeneity and party system size employing national-level data, therefore their conclusions suffer from the same drawbacks that we have pointed out above. More recently, however, Milazzo and her colleagues 2018 incorporate this expected curvilinear relationship to their study on the effect of ethnic heterogeneity on the party system size at single-member districts.

Here, the main point of discussion is determining how many groups is too many such that it creates a disincentive for groups to form parties by themselves. I could

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<sup>1</sup>Note that Potter's (2014) study uses a bayesian method for measuring social diversity. Whereas Potter's (2018) study uses Krippendorff's alpha. In this study, I employ the dataset of Potter (2018). While the replication material of Potter (2014) is not available, the observational nature of the data in Potter (2018) is the main advantage in comparison of the estimated diversity scores of Potter (2014).

not find any studies tackling this issue. Since the theory behind the supposed relationship affects our estimation strategy, I further discuss this point in the relevant sections of the following empirical analyses.

## 2.4 Data and Measurement

This chapter comprises two empirical parts. In the first set of empirical analyses, I show how introducing measures like cross-cuttingness can potentially alter our conclusions about the effects of electoral institutions and ethnic heterogeneity on the party system size. In the preliminary analysis, I make use of Clark and Golder's (2006) replication data and Selway's (2011) dataset on crosscuttingness. Both of these datasets are at the country level; therefore, we should consider them as preliminary analyses pointing towards some non-definitive conclusions.

In the second part of the empirical analyses, I use district-level data. For this analysis, I use Potter's (2018) replication material as the primary data source. The data are gathered from the first three waves of the CSES database (2014). The data include 871 observations of individual districts from 13 European democracies. More specifically, the dataset covers a period between 1995 and 2011, and includes the following countries: Austria, Croatia, Finland, Ireland, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, and Switzerland. While the CSES database includes SMD countries such as the US and Canada, due to the very low numbers of respondents per district, the dataset I use does not include these countries. Potter's (2018) dataset also includes constituency-level election results covering the same time frame and districts. The source of these data is Global Elections Database by Brancati (2014). Lastly, I manually added the number of presidential candidates in elections prior to the legislative elections and the proximity between the two consecutive elections.

### 2.4.1 Dependent Variable: Effective Number of Parties

As Laakso and Taagepera (1979) put, when the number of parties is subject to scientific inquiry, the relative size of the parties should also be taken into account. In this regard, as per convention, I use the effective number of parties measure introduced by Laakso and Taagepera (1979). As Laakso and Taagepera (1979)

explain, “[T]he effective number of parties is the number of hypothetical equal-size parties that would have the same total effect on fractionalization of the system as have the actual parties of unequal size.” I calculate the effective number of parties as follows:

$$\text{Effective Number of Parties} = \frac{1}{\sum_{i=1}^n p_i^2}$$

where  $p_i$ , is the share (of votes or seats) of the  $i_{th}$  party/candidate. If all shares are equal, effective number of parties is equal to the actual number of parties. If one party has a huge majority, the effective number of parties is slightly greater than 1.

As Duverger’s law suggests, mechanical and psychological effects of electoral institutions lead voters to behave strategically, we are primarily interested in the number of parties that take part in electoral competition. Therefore, in the following empirical analyses, I employ the effective number of electoral parties, rather than that of legislative parties.

## 2.4.2 Independent Variables

### Effective Number of Presidential Candidates

As previous studies almost unanimously demonstrate the role of presidential elections in influencing the nature of competition in legislative elections, I include a control for the number of presidential candidates in the presidential election that takes place prior to the legislative election. In order to account for the vote distribution among the presidential candidates I incorporated Laakso and Taagepera’s (1979) effective number measure to calculate the effective number of presidential candidates. Since previous research (Neto and Cox 1997; Clark and Golder 2006) show the proximity of the two elections also plays a moderating role on the number of presidential candidate’s effect on party system size, I include a proximity variable as well. This variable ranges from 1 to 0, where 1 means concurrent presidential and parliamentary elections and 0 is given to the greatest gap in our dataset. Since some countries in our sample do not have presidential elections, I assigned 0 to the effective number of presidential candidates and the proximity scores.

### District Magnitude

This study consists of two parts and the operationalization of this variable is different for the two analyses. In the preliminary analyses, I employ the log of the

average district magnitude to account for the change in the number of seats among districts. Since the preliminary analyses are at the country level, the district magnitude variable is calculated by taking the mean magnitude of all the districts in a country.

In the main analysis, at the district level, I employ the log of the magnitude of each district. I take the log in both of the analyses to account for the diminishing increase in the effect of greater magnitudes. Equally importantly, this operationalization allows us to estimate the effect of social diversity when the district magnitude is 1. Below, I explain the estimation strategies in more detail.

### **Social Heterogeneity**

In the preliminary analyses in which I use Clark and Golder's (2006) dataset, I examine the marginal effect of ethnic heterogeneity as a dimension of the cleavage structure in a society. The ethnic fractionalization data are gathered from Fearon (2003). Then, Clark and Golder (2006) calculate the effective number of ethnic groups by using Laakso and Taagepera's (1979) formulation for effective number of parties.

In the main analyses, I employ Potter's (2018) dataset which includes latent diversity values for each district in the dataset. Potter (2018) uses Krippendorff's alpha, which is originally an intercoder reliability index. As Potter (2018) puts, Krippendorff's alpha is flexible enough to incorporate different types of data (e.g., individuals' survey responses). Potter (2018) puts individual survey respondents in the place of coders; each individual's responses for each of the six demographic traits represent six items (i.e., ethnicity, language, religion, urbanness, income, and regime support). When two respondents' values for these six traits are similar, Krippendorff's alpha gets closer to 1, which means uniformity. Since we are interested in constituency diversity but not similarity, the measure is rescaled by subtracting it from 1. Thus, values close to 0 indicate low levels of heterogeneity.

Using this operationalization, we can account for several sociological traits and how they reinforce or overlap. While this approach is not exempt from its own drawbacks, in this study I utilize the same method. The reason is straightforward. As explained above, there are three main drawbacks of previous studies. The first is the aggregation level of the data employed. Using this methodology, we can assign heterogeneity scores at the district level. The second drawback is about measuring social heterogeneity. As Potter (2018) suggests, instead of selecting a particular cleavage dimension and assuming that it is a salient characteristic of all societies in the dataset, adopting a method in which the data speak for themselves seems a better

choice. Lastly, as explained above, not taking into account the mutually reinforcing or offsetting relationships between different cleavages can mislead our conclusions. Since this method takes into account the overlaps among six demographic traits, it allows us overcome this drawback as well.

On the other hand, the main problem with this approach is that the data collected for each district are not randomly sampled. Since CSES surveys are representative of the individual countries but not necessarily of the districts, we incorporate measurement error. However, there are no available cross-national surveys with probabilistic sampling at the district level (Potter 2018). In order to tackle the potential nonrepresentativeness of the samples, Potter (2016) undertakes several steps. First, he pools the data coming from the three waves of the CSES. By increasing the number of respondents, he suggests that his district-level samples become inherently more representative. Thanks to this pooling, the number of respondents from each district increases substantially (128 respondents on average and oftentimes greater than 300). Furthermore, due to this pooling, only one time-invariant diversity score is assigned for each district. Since social heterogeneity is one of the two main independent variables, this time invariant nature of the social heterogeneity score forces us to not treat the data as panel data.

Furthermore, in order to prevent the potential bias of the district-level sampling, Potter (2018) drops districts with low ‘response rates’. That is, he divides the total number of respondents from a district to the district’s voting population. If the value is at or below the 1st % of the district’s voting population, he drops it from his empirical analyses. In this study, I employ the same approach since these districts have the highest potential of being unrepresentative. The findings do not change in substantive or statistical terms when the cut-point is changed to 5 or 10% or when we apply no cut-points.

In both the preliminary and the main analyses, I employ the logarithm of ethnic heterogeneity/social diversity, due to the theoretical expectation that for very high values of diversity, individual groups become small enough to be disincentivized from forming political organizations of their own. In this regard, another possible way to incorporate this theoretical expectation is to include both the social heterogeneity variable and its square value into the model (Milazzo, Moser, and Scheiner 2018). While I present the findings for the logged social heterogeneity, the findings from the models where I adopt the latter strategy are also in line with the presented findings.

## 2.5 Preliminary Analyses

In the preliminary analysis I demonstrate how incorporating more nuanced approaches to the measurement of social structure can improve our understanding of the relationship between social diversity, district magnitude, and the number of parties. As the title of this section suggests, the findings in these analyses are far from conclusive. However, they are still important in showing that previous studies might have reached misleading conclusions due to overlooking the role of other cleavage dimensions in shaping the party system.

The main hypothesis we test in both the preliminary and the main analyses is the conditional hypothesis that Duverger (1959) puts forward:

H1: When the electoral system is permissive enough social diversity increases the number of parties.

### 2.5.1 Estimation Strategy

In the preliminary analyses, I use Clark and Golder's (2006) model. I split the sample by the level of ethnoreligious crosscuttingness. Doing so is equivalent to introducing the three-way interaction between ethnic heterogeneity, district magnitude, and crosscuttingness, which makes our model equation as follows:

$$\begin{aligned} \text{Effective Number of Electoral Parties} = & \\ & \beta_0 + \beta_1 \text{Log(Effective Number of Ethnic Groups)} \\ & + \beta_2 \text{Log(Magnitude)} + \beta_3 \text{Upper Tier Seats} \\ & + \beta_4 \text{Effective Number of Presidential Candidates} + \beta_5 \text{Proximity} \\ & + \beta_6 \text{Log(Effective Number of Ethnic Groups)} \times \text{Log(Magnitude)} \\ & + \beta_7 \text{Log(Effective Number of Ethnic Groups)} \times \text{Upper Tier Seats} \\ & + \beta_8 \text{Effective Number of Presidential Candidates} \times \text{Proximity} + \epsilon \end{aligned}$$

Before moving on to the findings, allow me explain why this estimation strategy has been chosen. In most of the countries, the average district magnitude is constant over observations. This prevents us from treating the dataset as panel. Because, we are mainly interested in the effect of average district magnitude. Most of the observations would be omitted if the sample is treated as panel. Therefore, we implement a pooled OLS model. Due to the longitudinal nature of the data, OLS can be misleading in calculating standard errors. Clark and Golder (2006) argue

that there are three alternative ways of overcoming this problem. The first is to employ a feasible generalized least squares model. However, because of the large  $N$  and comparatively small  $T$  (elections) the model would underestimate the standard errors. The second alternative is to use panel-corrected standard errors (PCSE). However, for PCSE to increase accuracy, there should be many elections per country. Since most of the countries in our dataset only have a few elections, this strategy is questionable as well. The third alternative is to employ OLS with robust standard errors clustered by country. By doing so, we can take into account the correlation of errors within each cluster (i.e., country). Thus, we are able to prevent unwarranted inferences due to inaccurate standard error estimates.

In the table and figure below, I introduce a crosscuttingness measure in estimating the marginal effect of ethnic heterogeneity. This measures the overlap between different ethnic and religious groups. When crosscuttingness is high, the overlap between the two cleavages is low. It is expected that high crosscuttingness would offset the differences between groups whereas low crosscuttingness would lead the two cleavages to mutually reinforce each other. In other words, low crosscuttingness would have a compounding influence on the level of diversity. Since lower crosscuttingness implies greater diversity, I expect ethnic heterogeneity to have a more substantial marginal effect where crosscuttingness is low.

The reasons why I adopted religion as the second cleavage in interplay with ethnicity are twofold. First, in these analyses, most of our observations are from Western Europe. As such, religion has played an important role in the formation of party systems in these countries (Lipset and Rokkan 1967). Secondly, there was greater variation in ethnoreligious crosscuttingness than other cleavages (e.g., income) in the dataset (Selway 2012).

### **2.5.2 Empirical Analysis and Findings**

Table 1 demonstrates our estimates based on Clark and Golder's (2006) model specification on three different samples. The first column shows estimates from Clark and Golder's (2006) sample whereas the other two columns show those for observations, in turn, with low and high crosscuttingness .

As Table 2.1 demonstrates, the coefficients are very much in line for each of the three samples. However, the estimated effect of the effective number of ethnic groups is positive and significant for the sample which consists of observations where religion and ethnicity's crosscuttingness is low, whereas the effects are not significant at the

Table 2.1 OLS Estimates on the Effects of Electoral Institutions and Ethnic Heterogeneity on Party System Size (Country-level Analysis)

	Clark & Golder (2006)	Low CrossCut.	High CrossCut.
Effective Number of Ethnic Groups	0.112 (0.143)	0.334** (0.102)	-0.082 (0.068)
Average District Mag. (Logged)	0.180 (0.531)	0.3044 (0.542)	0.472 (0.867)
Average District Mag. (Logged) $\times$ Effective Number of Ethnic Groups	0.607 (0.392)	0.392 (0.356)	0.867 (0.605)
Proximity	-3.098*** (0.461)	-2.842*** (0.713)	-3.415*** (0.746)
Effective Number of Presidential Candidates	0.264 (0.146)	0.274** (0.093)	0.312 (0.249)
Proximity $\times$ Effective Number of Presidential Candidates	0.683** (0.230)	0.541* (0.211)	0.722* (0.302)
Upper Tier	-0.057 (0.033)	-0.011 (0.055)	-0.011 (0.059)
Upper Tier $\times$ Effective Number of Ethnic Groups	0.059** (0.021)	0.014 (0.042)	0.043 (0.035)
Constant	2.916*** (0.347)	2.741*** (0.401)	2.814*** (0.405)
N	487	251	236
$R^2$	0.397	0.428	0.445

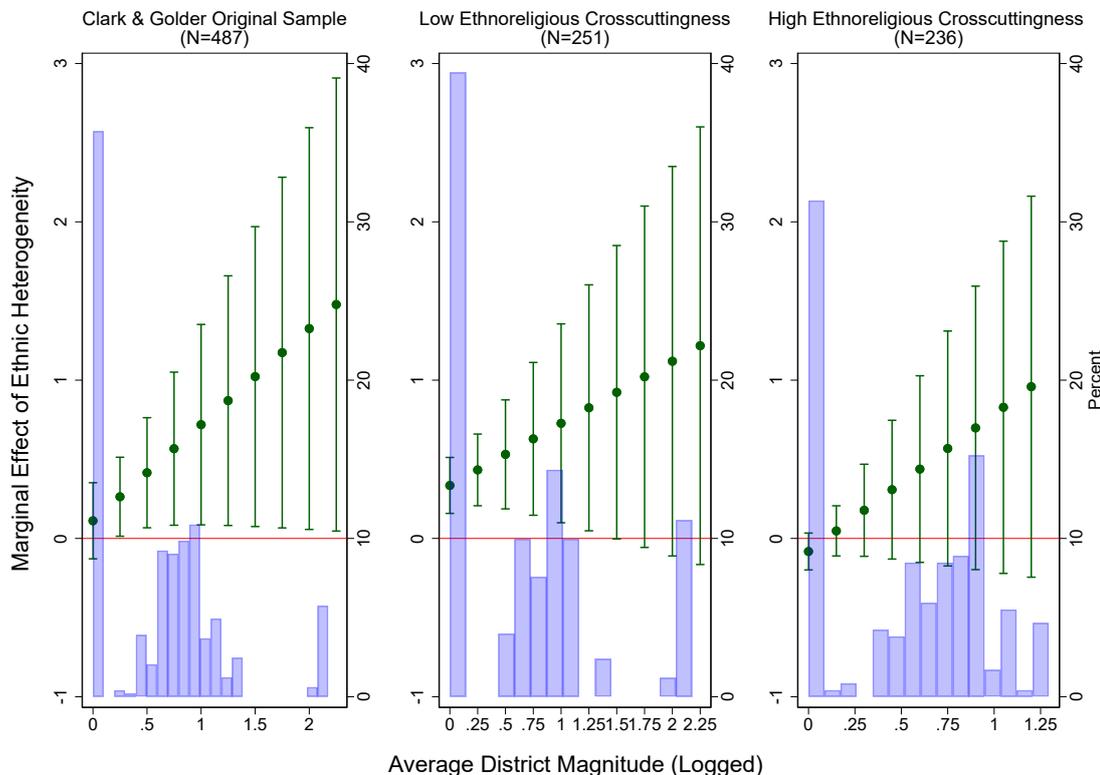
Standard errors clustered by country in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , two-tailed tests.

other two samples. This finding is important because it suggests that it is likely that the conditional hypothesis (H1) might not be supported when other cleavage dimensions are added into the picture. This finding is in line with most recent studies suggesting that Duverger overestimates the downward pressure of SMD systems on party system size (e.g., Milazzo, Moser, and Scheiner 2018, Lublin 2017).

In Figure 2.1 we can see that for societies in which religion and ethnicity highly crosscut (i.e., a low overlap between these two group identifiers), regardless of district magnitude, the marginal effect of ethnic heterogeneity on party system size is indistinguishable from zero. Whereas for countries with low crosscuttingness between religion and ethnicity (i.e., a high overlap between these two cleavages) we can observe that the marginal effect of ethnic heterogeneity is always greater than zero until the average district magnitude is beyond 100. Moreover, marginal effect estimates are always higher in the subsample with low crosscuttingness than in the sample of countries with high crosscuttingness. For the low crosscuttingness sample, regarding the marginal effects estimates getting indistinguishable from zero after an average district magnitude of 100, we should note that there are only two countries (i.e., Israel and the Netherlands, which together constitute 31 of all the observations) with such large average district magnitudes, and those countries only have a single (national) district. Since such large districts cover the whole country, it is quite natural that the number of parties do not increase after a certain level. In order to

Figure 2.1 Introducing Ethno-religious Crosscuttingness to Clark & Golder (2006) (Dependent Variable: Effective Number of Electoral Parties) (90% Confidence Level)



control for the diminishing positive effect of district magnitude on the number of parties, we employ the log of district magnitude. However, even after taking such a measure, we are expecting Israel to have an effective number of parties at the national level two times greater than a country with an average district magnitude of around 10 (e.g., Greece, Argentina, Norway, Portugal). Since such an expectation does not have any theoretical backing, in Appendix A (Figure A.1), I also show how marginal effect of ethnic heterogeneity at larger districts is estimated to be higher and significant (at 95% confidence level) when the two cases of Netherlands and Israel are dropped from our sample.

Even though these findings hint that previous studies which focused on only one dimension of social heterogeneity and used country-level data are highly model dependent, as mentioned above, our findings are far from conclusive as well. The main reason is that the aggregation level of the data in our analysis is also at the country level. As explained above, the theory we test here is inherently a district-level one. Therefore, there remains a theory-data mismatch. Furthermore, while I introduce ethnoreligious crosscuttingness as an important variable that can potentially alter our findings, Clark and Golder's (2006) model does not include religious hetero-

geneity as an independent variable. The reason why I could not include religious heterogeneity into the model is because there is no such dataset which covers both religiosity and ethnoreligious crosscuttingness on such a large cross-national sample. It might well be that in some countries where ethnoreligious crosscuttingness is low, the effective number of ethnic groups is close to 1. In such a case, even if religion and ethnicity would potentially reinforce each other, due to the domination of an ethnic group over others, religious differences might not be politically salient. Hence, not being able to incorporate religious heterogeneity is another important drawback that does not let us reach definitive conclusions. Moreover, even though our selection of both ethnicity and religion as two cleavage dimensions has theoretical and methodological reasons, it can still be questioned whether such a decision can be plausible for all societies. In order to overcome these problems, in the remainder of this chapter, I will make use of district-level data from Potter (2018). As noted above, this dataset contains a new measure of latent social heterogeneity constructed by using survey data from multiple waves of the CSES project.

## 2.6 Main Analysis

The dataset I use in this section includes 871 election-district observations, using which, I attempt to tackle the drawbacks that previous research (and the preliminary analyses above) suffers from. First, I use a constituency-level dataset to test a constituency-level theory. Therefore, I fix this mismatch between the data and theory. Secondly, I use Krippendorff's alpha score as a measure of latent social diversity. By doing so, I do not arbitrarily ascribe priority to any cleavage dimension. This is important because, in previous research (including our preliminary analyses above), ethnic heterogeneity has been assumed to be a proper proxy of latent diversity in society. Such an assumption might not be plausible for all countries or districts. At the same time, this measure takes into account the reinforcing and overlapping nature of different cleavages. Finally, I test whether modeling the relationship between social heterogeneity and number of parties is linear.

### 2.6.1 Estimation Strategy

In the main analyses I adopt an interactive ordinary least squares model with country-year dummies. Although the data are longitudinal, one feature of our data prevents us from treating it as time-series-cross-sectional. As noted above, in order to increase the sample sizes from each district, Potter (2018) pooled the observations of the three waves of the CSES dataset. Thus, the heterogeneity score for each district is time invariant. This means that the heterogeneity score variable should be omitted had we treated the data as panel. Since the marginal effect of heterogeneity over party system size is our main quantity of interest, we cannot do so. Another point worthy of noting here is that due to the nested nature of the data clustering standard errors by country would be the ideal strategy. However, the number of countries in our dataset is only 13, which is far below the advised number of clusters to get correct standard errors (Angrist and Pischke 2009). As such, in order to account for the clustered nature of the data, I bootstrap the standard errors.

$$\begin{aligned} \text{Effective Number of Electoral Parties} = & \\ & \beta_0 + \beta_1 \text{Log}(\text{Social Heterogeneity}) + \beta_2 \text{Log}(\text{Magnitude}) + \\ & \beta_3 \text{Log}(\text{Social Heterogeneity}) \times \text{Complementary Tiers} + \\ & \gamma_1 \text{Country-Year Dummies} + \epsilon^2 \end{aligned}$$

### 2.6.2 Empirical Analysis and Findings

In Table 2.2 below, Model 1 is our main model where I employ the log of social heterogeneity in order to account for the diminishing positive effect of increasing heterogeneity on the number of parties. In Model 2, I instead employ the social heterogeneity score as is. In Model 3, I apply the modeling strategy previously employed by Milazzo, Moser, and Scheiner (2018) to account for a possibly reverse-U shaped relationship between social heterogeneity and party system size.<sup>3</sup> In order to assess the effect of social heterogeneity on party system size in SMD systems, we should look at the coefficients of Social Heterogeneity (log), Social Heterogeneity, and Squared Social Heterogeneity in the respective models. In Models 1 and

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<sup>2</sup>In Appendix A. Figure A.3 I split the sample based on presidential and parliamentary systems. While for the parliamentary systems the findings support our hypothesis, for presidential systems the marginal effect estimates are never distinguishable from zero. However, higher district magnitude predicts greater marginal effects.

<sup>3</sup>An F-test of Models 2 and 3 I conducted suggests that the added parameters in Model 3 make the model significantly different from Model 2. Thus, the squared term is not irrelevant in Model 3. This provides support for Milazzo, Moser, and Scheiner's (2018) strategy.

2, we can observe that the estimated effects are not statistically significant. This suggests that, in SMD systems, party system size is not affected by social heterogeneity. However, in Model 3 we observe that the coefficient of the Squared Social Heterogeneity variable is positive and statistically significant. This finding suggests that when social heterogeneity is very high, the number of parties, even in SMD systems, is affected positively. Thus, this runs against our theoretical expectations that there might be a reverse-U shaped relationship between social heterogeneity and the number of parties. However, we should note that this only applies for single member districts and does not allow us to reach any conclusions for districts with higher magnitude.

Table 2.2 OLS Estimates on the Effects of Electoral Institutions and Social Heterogeneity on Party System Size

	Model 1	Model 2	Model 3
Social Heterogeneity (Logged)	1.409 (1.096)		
District Magnitude (Logged)	1.469*** (0.259)	0.110 (0.656)	-6.508** (2.099)
Social Heterogeneity (Logged) $\times$ District Magnitude (Logged)	2.300* (1.057)		
Complementary Tier $\times$ Social Heterogeneity (Logged)	-0.285 (0.852)		
Social Heterogeneity		1.361 (0.943)	-14.344 (7.342)
Social Heterogeneity $\times$ District Magnitude (Logged)		1.387 (1.073)	25.281** (8.017)
Complementary Tier $\times$ Social Heterogeneity		-0.094 (0.736)	4.099 (5.404)
Social Heterogeneity <sup>2</sup>			13.795* (6.831)
Social Heterogeneity <sup>2</sup> $\times$ District Magnitude			-20.901** (7.342)
Complementary Tier $\times$ Social Heterogeneity <sup>2</sup>			-3.762 (4.951)
Constant	4.510*** (0.312)	3.515*** (0.439)	6.716*** (1.717)
N	871	871	871
R <sup>2</sup>	0.649	0.648	0.653

Bootstrapped standard errors in parentheses. Note: Country-year fixed effects are omitted.

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001, two-tailed tests.

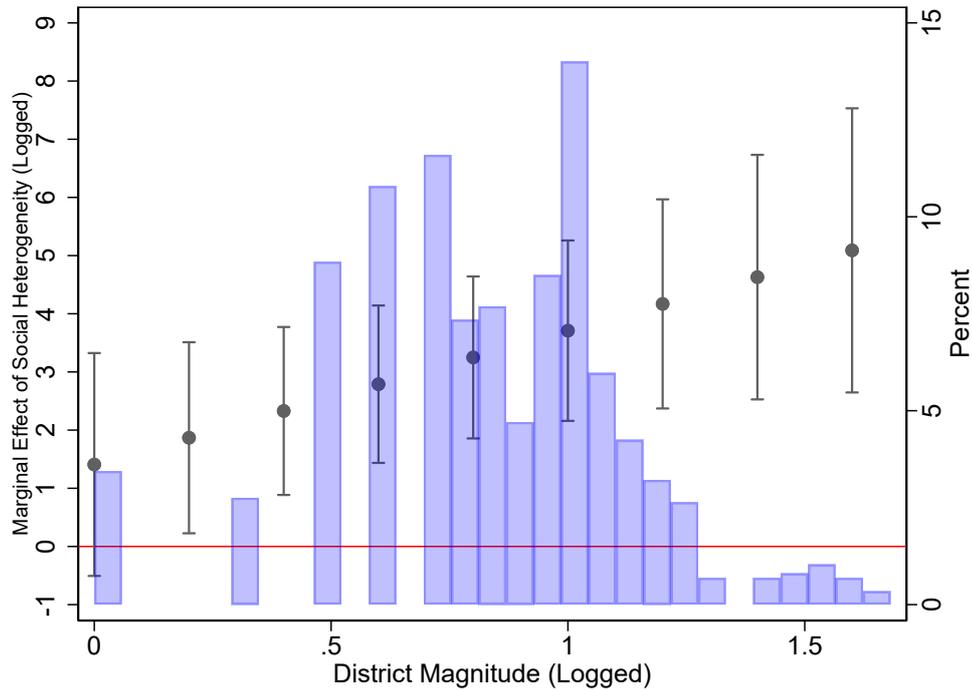
As Figure 2.2 demonstrates the marginal effects of social heterogeneity on party system size from Model 1, the conditional hypothesis put forward by Duverger (1959) holds in a district-level analysis. Moreover, it is such that the marginal effect of social heterogeneity is not distinguishable from zero almost exclusively for party systems with single member districts. In this analysis, we improve the data, both in terms of the level of aggregation and the measurement of social diversity. Therefore, without prioritizing one dimension over others and testing the theory with an appropriate

level of aggregation, we are more confident in our finding that Duverger's law finds strong empirical support.

In Figure 2.2, we see that the marginal effect estimates of social diversity takes values between 1.5 and 5. Given the confidence intervals associated with those point estimates, the marginal effects range from -1 to almost 8 depending on the magnitude of the district. As explained above, the social heterogeneity measure employed in this study can take values between 0 and 1 and the values of this variable in the effective sample ranges from  $\log(0.29)$  to  $\log(0.87)$  (i.e., -0.53 and -0.06 respectively). As such, from the least diverse to the most diverse district in our dataset, the effective number of parties can increase as much as 4 units. This is greater than 3 standard deviations of the full sample. Therefore, we can conclude that these results are not only statistically significant but also substantively important.

Despite these substantively significant findings, it might still be that some of the dimensions included in the calculation of the heterogeneity scores of districts (i.e., ethnicity, income, urbanization, language, religion, and regime support) are irrelevant for the districts' political context and lead to an inflation of the heterogeneity measure. If this is the case, we might argue that our marginal effects estimates are biased downward. Ultimately this leads us to conclude that cross-national research on party system size should examine the interactive effects of social structure and electoral institutions on party system size with a more informed and nuanced understanding of the cleavage structures of different societies. Another important result worthy of mentioning is the positive association between greater permissiveness and higher marginal effect estimates. However, due to the overlap between the confidence intervals we should refrain from making definitive conclusions and consider this as a partial support for the interactive hypothesis.

Figure 2.2 Marginal Effect of Social Heterogeneity on Party System Size | District Magnitude (95% Confidence Level)



## 2.7 Discussion and Conclusion

In this study, I reviewed the extant literature on the interactive effects of social heterogeneity and electoral institutions on party system size. Following a review and theoretical discussion, I tested the conditional hypothesis that social diversity increases the number of parties only in permissive electoral contexts. Previous studies have two main drawbacks that lead them reach inconclusive findings when assessing Duverger’s theory empirically. First of those is the aggregation level of the data they employ. While the theory assumes a district-level mechanism, almost all of the previous studies use country-level data. Moreover, the studies do not provide any theoretical justification for doing so. Therefore, in the main analysis of this study, I test the theory at an appropriate level of aggregation.

The second main drawback of previous studies has been their approach towards social heterogeneity. Again, almost all previous studies estimate the marginal effect of ethnic heterogeneity on party system size conditionally on district magnitude. Some studies (e.g., Ordeshook and Shvetsova 1994) take this cleavage into account with

the reasoning that it is exempt from the effect of electoral institutions and politics, therefore from endogeneity. In contrast, other studies (e.g., Mozaffar, Scarritt, and Galaich 2003; Lublin 2017) put forward a constructivist explanation of the relationship between ethnic heterogeneity and party system size. The third approach that previous studies have taken towards ethnic heterogeneity is to consider it as a proxy for the overall diversity of a society (e.g., Clark and Golder 2006). While there remains an unsettled discussion over what ethnic heterogeneity represents, I point to another important issue that requires further debate: the incorporation of other cleavage structures into the theoretical relationship between social heterogeneity and party system size.

I argue that the incorporation of other social cleavages would change our findings substantially. Therefore, while a discussion on the nature of ethnicity in terms of primordialism and constructivism is important, overlooking other social cleavages and their interplay with ethnicity or with each other does not have a theoretically sound explanation. In order to show how our findings can potentially change if we introduce different cleavages into the model, I first employed Clark and Golder's (2006) dataset and estimation strategy and split the sample based on ethnoreligious crosscuttingness. Due to the potentially reinforcing or offsetting effects of these two cleavages, we reach to the conclusion that when the overlap between religion and ethnicity is high, the effect of ethnic heterogeneity is reduced due to the offsetting nature of the two cleavages. In contrast, when the crosscuttingness is low between the two cleavages, ethnic heterogeneity becomes a more influential factor in explaining the higher number of parties in a district. Moreover, as Figure 1 demonstrates, our findings put doubt over the proposition that social heterogeneity does not have an effect on the number of parties until a certain level of permissiveness.

In the second part of this chapter, I addressed the two main problems that previous studies suffer from. I employed Potter's (2018) district-level latent social heterogeneity measure in order to account for the overall social heterogeneity in a society. By tackling the problem over the aggregation level of the data and that with regards to measuring social heterogeneity, I reached more valid findings. Ultimately, our findings support Duverger's proposition that single member districts are insensitive to social heterogeneity and that after a certain level of permissiveness greater social heterogeneity is associated with greater number of parties. In addition, we also see that at larger districts the estimated marginal effects are also higher, providing suggestive evidence that increasing permissiveness increases the influence of ethnic heterogeneity. Furthermore, in substantial terms, the effect of social heterogeneity seems to be quite high. In our dataset the difference between the least and most diverse districts is 4 effective number of parties when the district magnitude is at its

greatest level, which amounts for three standard deviations of our sample. It might be the case that among the six cleavage dimensions that were taken into account when measuring social heterogeneity, some of them were not politically salient dimensions for some districts and the heterogeneity caused by the inclusion of these dimensions could simply inflate the heterogeneity scores (Mozaffar, Scarritt, and Galaich 2003, Posner 2004), causing a downward pressure over our marginal effects estimates. Lastly, as Models 1 and 2 in Table 2, and the estimated marginal effects for each of these two models suggest, our modeling decision of using the log of social heterogeneity due to the theoretical expectation that the diminishing positive effect of social heterogeneity, does not change the findings in terms of substantive or statistical terms in meaningful ways. This might be either because social heterogeneity in our dataset was never that high or that the relationship between social heterogeneity and party system size is linear.

Of course, this study has its own limitations, too. First, even though the number of observations in the dataset is relatively high (871), all these observations come from 13 European countries. In this regard, there is still room for improvement regarding the external validity of our findings. Furthermore, as explained above, social heterogeneity scores assigned to each district might not be representative of the target populations. Therefore, our findings might be biased but we do not know in which direction. Finally, taking an a priori approach to social heterogeneity might be advantageous in the sense that we make no assumptions regarding what cleavage dimension (e.g., ethnicity) is politically salient. However, this approach might also make us estimate inflated latent social heterogeneity scores due to taking politically irrelevant cleavage dimensions into account.

Considering the limitations of the analyses in this chapter, in the following chapter I will assess whether Duverger's conditional hypothesis finds empirical support in the political context of Turkey. More precisely, by conducting this analysis outside of Europe, in a party system that has been dominated by a single party over the course of 20 years, I attempt to test if our findings can be extended to cases that are considerably different than those in this chapter. Moreover, even though the main analysis in this chapter uses district-level data, we could not really exploit within country variation to its fullest extent. Therefore, in the following chapter, using district-level data in a single-country analysis, I will also analyze how cross-district differences influence the relationship between social heterogeneity, district magnitude, and party system size. Finally, while prioritizing one cleavage (i.e., ethnic heterogeneity) over others might be problematic in cross-national research, as I have tried to explain in this chapter, our preferred method in this chapter is also likely to introduce noise when it is applied to single-country studies where we

have the opportunity to assess the influence of the most salient social cleavages. As such, in the following chapter, I focus only on a single social cleavage that has been regarded as one of the two main cleavages shaping Turkish politics in the last 30 years.

### **3. ETHNIC HETEROGENEITY, DISTRICT MAGNITUDE AND THE TRANSFORMATION OF THE PARTY SYSTEM IN TURKEY**

#### **3.1 Introduction**

This chapter focuses on the Turkish context in analyzing the effects of social diversity (particularly, ethnic heterogeneity) and electoral institutions on the party system size. This study utilizes a novel dataset that comprises of constituency-level election results for general elections that took place in Turkey between 2002 and 2018. In addition, the dataset includes ethnic diversity scores for each constituency. The primary goal of this chapter is to test the interactive hypothesis put forward by previous literature on the effects of district magnitude and ethnic heterogeneity on party system size.

Previous research on this topic have made use of national-level data to test an inherently district-level mechanism (e.g., Ordeshook and Shvetsova 1994; Cox 1997; Clark and Golder 2006). Recognizing this theory-data mismatch, more recent cross-national studies contributed to the literature by using district-level data (Potter 2014; Milazzo, Moser, and Scheiner 2018). However, these more recent studies have their problems in terms of data collection and/or scope (e.g., Milazzo, Moser, and Scheiner 2018).

The chapter proceeds as the following. First, I discuss the relevant literature on party system dynamics in the Turkish context. This is followed by a review of Kurdish electoral politics in Turkey. Then, the data and empirical strategy are presented. After introducing the data and empirical strategy, I interpret the main findings of the empirical analyses. Finally, I discuss the implications for the Turkish party system.

## 3.2 Literature Review

There is a considerably large literature on the Turkish party system. With a democratic tradition of more than seventy years, as well as military coups having interrupted the democratic process almost once in every decade, the party system has evolved overtime. The literature on Turkey's party system has been focused mostly on the temporal changes and continuities in the characteristics of the Turkish party system. Therefore, the following section will give a more historical account that describes the evolution of the party system. However, regional differences and changes in party system size have been analyzed as well.

### 3.2.1 Evolution of the Party System in Turkey

After the establishment of the Turkish Republic in 1923, the country was ruled by a single party dictatorship until 1946. In 1950, Turkey experienced its first multiparty democratic election in which the founding party, Republican People's Party (Cumhuriyet Halk Partisi – CHP) was challenged by the Democrat Party (Demokrat Parti – DP). The winner of the election was the challenger, DP. This early transition to a multiparty democracy was followed by a military intervention in 1960, which formed a precedent for the following several coups in the ensuing decades.

As Çarkoğlu (2011) emphasizes, despite the military interruptions and the civil unrest both before and after these interruptions, party politics has had an autonomy of its own. For instance, this autonomous nature of the party system is reflected by the continuity of the support for the same party families in specific regions (Ergüder and Hofferbert 2011; Çarkoğlu and Avcı 2002) as well as by individuals' identifications with the same party families over time (Kalaycıoğlu 1994; Çarkoğlu 2012).

Multiparty politics in Turkey is often analyzed according to Mardin's (1973) center periphery cleavage framework. This framework suggests that Turkish politics reflects a societal/cultural divide between those at the center, who are modernist, westernized, and enjoying the state class' support, and those at the periphery, who are more traditionalist, religious, and antagonist toward the center's vision for Turkey as a modern and secular state and society. Previous research demonstrates that this center-periphery divide in the Turkish context, correlates with and functions as what

the left-right ideological spatial dimension presents in many Western democracies (Çarkoğlu and Hinich 2006; Çarkoğlu and Avcı 2002).

One important detail in this divide is particularly relevant for our purposes. The peripheral groups are less homogeneous in comparison to the center. The periphery comprises of different ethnic, linguistic, and religious groups. While ethnic Kurds or Arabs are a natural part of this periphery, more conservative and/or religious Turks are also at the peripheral part of this cleavage. What essentially makes the peripheral forces to come together is their reaction against the top-down modernization approach adopted by the central forces.

Following the two-party system in 1950s, the Turkish democracy witnessed a proliferation of parties. This proliferation resulted in the establishment of parties within the lines of the already existing cleavages (Sayari 1978). For example, the central forces which advocated for a more modernized outlook for the country were divided by DSP and CHP, where the former had a slightly more nationalistic tone and both adopting social-democratic party programs. Similarly, the peripheral forces formed their own separate parties. Most prominently, there had been three groups, representing the Islamists (i.e., the National Salvation Party or National Outlook traditions), the ultra-nationalists (i.e., the Nationalist Action Party), and the center right (represented by the AP, ANAP, and DYP) (Çarkoğlu 1998). This proliferation of parties peaked at the 1999 general elections with 6.7 effective number of parties (Arıkan Akdağ 2013).

Even though the proliferation of parties from both sides of the center-periphery cleavage led to different parties to come to power, except for short coalition governments in which centrist forces took part, peripheral forces managed to form the governments thanks to their successful electoral record. More specifically, it has been one group within the periphery which proved to be most successful in various elections during the second half of the 20<sup>th</sup> century. This is the group representing conservative segments of the society that were neither ultra-nationalist nor Islamist (Kalaycıoğlu 2007). In other words, it was the group that had a more right of the center ideological stance.

This proliferation of parties following the 1980 coup was quite unexpected. Following the 1980 coup, a law that established a 10% nationwide electoral threshold was introduced in 1983. The goal was to stabilize the country's politics by reducing the number of parties in the parliament. However, what happened was quite the opposite. With the removal of the ban of important political figures in 1987, the party system fragmentation had accelerated (Arıkan Akdağ 2013). While the factors behind this proliferation are not a topic of discussion in this study, it was only after

the 2002 general elections that the 10% legal threshold fully demonstrated its clout over the translation of votes into seats (Arslantaş, Arslantaş, and Kaiser 2020).

In the 2002 general elections, 47% of the cast votes did not translate into seats in the parliament because they were for the parties that could not surpass the 10% nationwide electoral threshold. It was only AKP (with 34%) and CHP (with 19% of the vote) that managed to receive an electoral support higher than this threshold. This tectonic shift from 6.7 effective number of legislative parties to 1.85 led to a change in the dynamics of party politics in Turkey (Arıkan Akdağ 2013).

While the 2002 general election has significantly altered the dynamics of the Turkish party politics, it might also be considered an important date for the pro-Kurdish nationalist parties. Despite receiving 6.22% of votes in the 2002 election, due to the 10% nationwide threshold the pro-Kurdish HADEP could not gain any seats in the parliament. The party experienced the same fate at the 1995 and 1999 elections as well, which corresponds to all the elections in which the Kurdish nationalist movement participated as a party of its own. However, in the following five elections, the Kurdish movement has managed to either circumvent the threshold or surpass it. For our purposes, this development is particularly important since it lets the ethnic diversity's effect on party system not be dwarfed or negated anymore. Moreover, the strategy of participating in elections as independent candidates in the 2007 and 2011 elections provides a great opportunity to assess whether the entry decisions of the independent candidates associated with Kurdish parties and supporters of these parties have any district-level rational calculation.

Returning to our discussion on the party system in Turkey, following the 2002 general elections, AKP managed to increase its vote share for three consecutive elections (34%, 47%, 49%). Receiving almost half of the available votes, the party was thus able to form single-party governments (Gumuscu 2013). On the other hand, the opposition was also being consolidated under three parties. The main opposition has been CHP with a vote share around 20-25%, MHP as the ultra-nationalist party having a vote share between 10 and 15% in the following elections, and the Kurdish movement's independent parliamentarians occupying 27 and 33 seats respectively while receiving votes around 6% in the two elections following the 2002 election. As such, at the end of the first decade of the new millennium, many scholars described Turkey's party system as a dominant party system in Sartori's terms (e.g., Çarkoğlu 2011; Müftüler-Baç and Keyman 2012; Gumuscu 2013).

On the other hand, the following general elections was held in June 2015 and the consequent snap election in November of the same year represent a change in the dynamics of party politics in Turkey. For example, Kalaycıoğlu (2018) characterizes

this period as crossroads for not only the party system but the democratic regime in Turkey. While the leader of AKP, Recep Tayyip Erdogan had managed to consolidate his popularity in the years before the 2015 elections, several events like the Gezi Park Protests and the 17-25 December corruption investigations along with the weakening of the economy resulted in an almost 10% loss in vote share of his party in the 2015 election. Moreover, the Kurdish movement, this time under the banner of HDP, had managed to surpass the 10% threshold by receiving 13.1% of all votes. This led to a new configuration in the parliament's seat allocations. For the first time since 1999, no party had enough seats to form the government on its own, in the aftermath of the June 2015 elections.

This also meant that it was the first time AKP could not form a single-party government (Kemahlioglu 2015). This development led to exploratory talks on a grand coalition between the two parties with the most legislative seats (i.e., AKP and CHP). However, these efforts turned out to be fruitless, and no coalition was formed. As a result, only 5 months after the June 2015 elections the country went to the ballot boxes once again and this time AKP received almost half of the votes, which enabled the party to form a single-party government. Even though AKP increased its seat share, all the three opposition parties (CHP, MHP, and HDP) remained in the parliament. However, both MHP and HDP lost significant numbers of seats, in total 61 seats (Aytaç and Çarkoğlu 2021).

The 5-month period between the two elections witnessed frequent and large-scale terrorist attacks, which made citizens cast their vote based on security rather than economic concerns (Kalaycioğlu 2018). While this tense atmosphere helped AKP to regain its dominant position in the Turkish parliament, the July 2016 failed coup attempt led to an informal coalition emerging between the ultra-nationalist MHP and Islamist AKP. Together, as the main forces of the periphery, as per Mardin's (1973) framework, they led the country to a constitutional referendum changing the political system of the country from a parliamentary to a presidential system in April 2017.

The following year Turkey witnessed its most recent parliamentary elections, which were held concurrently with the presidential election. During the late 2000s, but especially following several events between 2013 and 2016 (e.g., Gezi Park Protests, the July 15th Failed Coup Attempt), the Turkish regime has become increasingly authoritarian. This democratic backsliding combined with increasing affective polarization among the voters led to a divide between the authoritarian coalition of AKP and MHP, and the opposition bloc formed by CHP, IYI Party, SP, and HDP (Erdogan and Uyan-Semerçi 2018; Moral 2021).

In the 2018 elections, AKP once again could not manage to get a parliamentary majority. However, with the 2017 constitutional change, the government is no more formed from within the parliament, but it is the president himself who forms his cabinet. Therefore, the new party system is characterized by two formal pre-electoral coalitions (Cumhur: consisting of AKP and MHP, Millet: consisting of CHP, IYI, SP) and the HDP (Moral 2021). This authoritarian divide which creates new dynamics makes Mardin's center and periphery framework lose some of its explanatory power. More specifically, a right-wing party like IYI coalesces with the leftist CHP as against other peripheral forces they consider as authoritarian. Similarly, parties like DEVA (Demokrasi ve Atılım – Democracy and Progress) and Gelecek are formed and joined the opposition bloc with concerns over the authoritarian direction the country is heading. Former president and the leader of Gelecek Party, Ahmet Davutoğlu even wrote a book explaining how the politics in various parts of the world, including Turkey, is witnessing a clash between those who respect liberal democratic values and those who do not (Davutoğlu 2020).

### **3.2.2 A Review of Kurdish Electoral Politics in Turkey**

While the democratic backsliding in Turkey led to the formation of two alliances cutting through the center-periphery divide, the Turkish-Kurdish cleavage remains a powerful force and still shapes party politics and electoral dynamics to a great extent (Rumelili and Çelik 2017). Historically, with the founding of the Turkish Republic in 1923, the country's leadership adopted a secular-nationalist outlook. Combined with an aspiration of forming a modern state similar to those in Europe, the peripheral forces were alienated. However, until the 1980s it was mostly the traditionalist vs. secularist/modernist cleavage that had shaped Turkish politics. Following the 1980s and especially during the 1990s, however, the Kurdish-Turkish divide has become a salient issue in politics and social life (Çiçek 2013).

After the 1960 coup, the peripheral forces were divided into two marginal and one center-right group. The center-right was represented by the AP, ANAP, and DYP, while the marginal groups were the (ultra)Nationalists and Pro-Islamists. In the 1990s, both the Nationalists and Pro-Islamists gained electoral ground. This has several reasons (Çarkoğlu and Hinich 2006). For instance, following the rise of the Kurdish separatist movement after the 1980s, the exclusionary ethnic understanding of nationalism advocated by MHP found a larger base to thrive (Çarkoğlu and Hinich 2006). On the other hand, the pro-Islamist movement had a more inclusive idea of a nation, based on the Islamic millet understanding which proposed Islam as the

common denominator defining Kurdish and Turkish identities (Çarkoğlu and Hinich 2006).

While the Kurdish movement at its initiation was born off of leftist groups, due to the inclusionary nation idea espoused by Islamist parties and the Kurdish citizens being disproportionately more religious, Kurdish voters have been a part of the Islamist parties' voter base. On this account, several studies have analyzed the competition between Islamist parties and pro-Kurdish parties in the Eastern and Southeastern regions of Turkey (e.g., Çiçek 2013; Arıkan Akdağ 2013). These two regions have historically been populated by significant numbers of Kurds. Moreover, as Çarkoğlu and Avcı (2002) and West II (2005) depict, the Turkish electoral geography comprises of three regions. These three regions are the coastal regions, the predominantly Kurdish Eastern region, and the third region between the two. While the coastal region has mostly been dominated by more leftist-secularist CHP, the middle region has been the stronghold for AKP and the other peripheral force, namely nationalist MHP. Whereas the eastern region has been a battleground between AKP's Islamist appeal and pro-Kurdish nationalist parties (Çiçek 2013).

During the 1990s, the Kurdish movement started to participate in elections as a party. In 1995, HADEP participated in general elections and won 24% of the votes in this Eastern region (Arıkan Akdağ 2013). However, the performance of the party was not uniform in all parts of the region. While it received around 50% of the votes in Diyarbakır, Van, and Hakkari, the vote share was around 10-15% in other provinces like Bingöl, Bitlis, Kars (Arıkan Akdağ 2013). Other parties that received a considerable vote share in the region were the other peripheral forces like the pro-Islamist Fazilet Party, and the center-right DYP and ANAP. Since the nationwide vote share of HADEP was below the 10% threshold (4.5%), these other peripheral parties gained all the legislative seats representing these provinces.

The electoral competition in the following general election did not have very different outcomes. With the capture of the Kurdish separatist PKK leader Abdullah Öcalan, the nationalist parties gained further ground, and this led to an increase in the vote shares of DSP and MHP in the 1999 parliamentary elections (Çarkoğlu and Avcı 2002, Arıkan Akdağ 2013). However, in the Kurdish-dominated region, the votes of the pro-Kurdish HADEP increased to 29%, whereas the second party was again the pro-Islamist party, this time under the name of Refah Party. These two parties were followed by ANAP and DYP as was the case in the previous election. However, again, due to the 10% national threshold, despite increasing its nationwide vote share to 4.75%, HADEP remained out of the parliament, and RP, ANAP, and DYP reaped the benefits of this non-permissive electoral institution. As such, in

the Kurdish populated region, we observe that it has been either the pro-Kurdish parties or peripheral parties with centrist or pro-Islamist ideological stances who could appeal for the regional votes (Çiçek 2013)

A similar picture can be observed in the new millennium. In the 2002 elections, the pro-Kurdish party, this time named DEHAP, received 6.14% of all votes at the national level. Once again, this was not enough for the party to be represented in the Parliament due to the 10% nationwide threshold. However, the party increased its votes by almost 50% compared to the 1995 and 1999 elections. Moreover, it received 36.1% of the votes in the Kurdish populated Eastern provinces (Arıkan Akdağ 2013). This time it was followed by AKP, which replaced the RP as the natural option for more Islamist-religious voters in the region. The two other peripheral parties, ANAP and DYP received in turn only 6 and 9% of the votes in these provinces and since their nationwide vote shares were below the 10% threshold, more than 60% of the seats representing this region were filled by the AKP ranks (Arıkan Akdağ 2013).

From the 2007 elections onward, the %10 threshold has become less of a problem for the representation of Kurdish nationalists in the parliament. This is because during the 2007 and 2011 elections, the respective Kurdish parties managed to circumvent the threshold by participating in the elections as independent candidates and in the following 3 general elections the Kurdish nationalist party HDP was able to acquire more than 10% of the cast vote. Moreover, after not being able to get into the parliament in the 2002 elections, we witness the virtual end of center right parties that were getting some of the vote in the region. Thus, between 2007 and 2018, the Kurdish vote had been split between AKP and HDP.

### **3.3 Theoretical Framework**

In this study, electoral institutions refer to electoral laws that regulate electoral competition. These laws range from nationwide thresholds to the minimum number of provinces a party must have an office to participate in the general elections. However, I do not intend to provide a full picture of the effects of all electoral institutions making up an electoral system. Rather, I focus on one institutional characteristic, namely the district magnitude. Nevertheless, I do show that the 10% nationwide threshold significantly influences the relationship we are analyzing in this study.

### 3.3.1 Institutions Matter

Getting back to our theoretical model from the previous chapter, Duverger (1959) and Cox (1997) point to strategic coordination as an important consequence of the magnitude of a district. Both strategic voters and candidates are assumed to have short-term rationality. That is, they only care about upcoming elections. Before moving to a discussion on the strategic behavior of voters and candidates, I would like to describe the features that characterize the voting process in Turkey.

According to Cox (1997), three fundamental questions should be answered to understand the main characteristics of the voting process. First question is about which entity a voter can cast their vote for. This can be a single candidate, a party list, a cartel, or a coalition. The second question is concerned with the number of votes each voter can cast. Depending on the voting rules, the number of votes a candidate can cast ranges from 1 to the total number of candidates competing in an electoral district. Lastly, a vote can either be exclusive or non-exclusive. An exclusive vote is when the cast vote for a particular entity (e.g., candidate, party-list) is not part of the calculations of any other seat allocation than that of the voted entity. In other words, the vote is not transferred or it does not appear in any other seat-relevant vote total. A non-exclusive vote, as the name suggests, is a vote that does not only appear in the calculations of an entity's seat allocation. The three main types of this nonexclusive vote are the single transferable vote, the pooling vote, and fused vote.

Now, let me describe the characteristics of the voting rules in Turkey along the lines laid down by Cox (1997). For a large part of the period within which this study is concerned with, voters had been able to cast their vote either for an independent candidate or for a party list. However, with the introduction of the pre-election coalition law in March 2018, parties have been able to build formal coalitions while competing in elections. Therefore, in the most recent general election, in June 2018, voters were able to vote for these coalitions as well. Answering the second question, the number of votes at each voter's disposal is 1. With regards to the third characteristic in Turkey's voting rules, one can argue that it fits well into the two-partite categorization (exclusive vs. nonexclusive vote) of Cox (1997). As such, every vote is only counted once, and it only benefits the entity that it is cast for.

Following this short description of the nature of the votes, now, let us analyze the electoral district in which parties compete and voters' votes are counted at. An electoral district is a geographical area in which votes are aggregated and seats are allocated (Cox 1997). When the geographical area cannot be partitioned into smaller

units (in which votes are aggregated and seats are allocated) it is called a primary electoral district. If an electoral system is comprised solely of primary electoral districts, it is referred to as a single-tier system. One important characteristic of an electoral district is its magnitude, in other words, the number of seats assigned to that district. For our purposes, the district magnitude is particularly important since it defines the permissiveness of the electoral structure in the district. This is because higher number of seats pushes downwards the natural threshold of votes a party must surpass to gain at least one seat in that district (i.e., threshold of representation).

In Turkey, there are no upper tiers. In other words, Turkey's electoral system is a single-tier system. In the six elections that I examine in this chapter, the number of primary electoral districts in the country increased from 85 to 87. Almost all electoral districts overlap with the boundaries of the 81 provinces or the NUTS-3 regions in the country. Only Ankara, Istanbul, Izmir, and most recently Bursa have more than one primary electoral district. Moreover, the magnitudes of the districts also vary. While having primary electoral districts with varying magnitudes is not a distinct characteristic of the Turkish electoral system, the variation is quite remarkable. The smallest district is Bayburt with only 1 seat assigned, and the districts with the greatest magnitude are both in Istanbul, each with 35 seats.

Another fundamental institution of an electoral system is the legal thresholds. For a party to gain seats in the parliament, in addition to the natural threshold that is a product of the magnitude and population size of a district, it must also surpass this legal threshold. These thresholds can be summed into two (Cox 1997): those at the primary district level and those at the secondary district level. One of the most well-known examples of the former is the 3.25% nationwide threshold in Israel. Since the whole country is a single primary district the national legal threshold functions as an example of this former kind of threshold. The Turkish electoral system is an example of a legal threshold at the secondary level. In Turkey, in addition to that a party must surpass the natural threshold in particular primary electoral district, it must also receive a total of at least 10% of all nationwide votes. These thresholds, while increasing the disproportionality between the votes and the seats allocated, they are devised to ensure a functional parliament with a lower number of legislative parties and electoral parties.

Now that I explained the most relevant characteristics of the Turkish electoral system, we can look at the process in which the cast votes translate into seats. In Cox's (1997, 59) terms, we can look at the "formulaic structure". What we mean by the formulaic structure is the mechanical process of the translation of votes into

seats. Overall, there are two main categories: the plurality/majority rule and the proportional representation rules. The former is quite straightforward, the entity that receives the majority of the plurality of the votes takes all that is being competed for. The textbook example of this formula is the single-member districts in the US, in which the party that receives the majority of the votes gets the seat (i.e., the seat allocated to the primary electoral district).

The formulae under the proportional representation category are both numerous and relatively more complex. Describing the many variants of the PR system is beyond the scope of this study. Thus, I will only look to the formulaic structure adopted in Turkey. Turkey has been using the d'Hondt system of votes to seats allocation since the aftermath of the 1960 coup. According to this proportional representation system named after the inventor of the method Viktor d'Hondt, at each stage of the allocation, one seat is allocated to the party with the highest average vote. For example, if a party  $i$  receives the highest vote ' $v_i$ ', in the first stage since its vote is divided by 1, it will get the seat. In the next stage, this party's vote will be divided by 2 and ' $\frac{v_i}{2}$ ' will be compared to the votes of other parties and the highest remainder will receive the next seat. This process continues until the number of seats allocated reaches the district magnitude. Overall, as Powell (1982) and Lijphart (1994) demonstrate, the disproportionality between votes and seats is greatest at majoritarian electoral systems, while the PR systems generally produce allocations of the seats in line with the proportions of the votes, providing that there are no legal thresholds.

In electoral systems, these electoral rules have a mechanical effect, leading to the translation of votes into seats. However, in addition to this mechanical effect, scholars argue that there is also a psychological (or strategic) effect of these institutions stemming from the mechanical effect they produce (e.g., Riker 1982; Cox 1997). In most prominent accounts of the effects of electoral institutions on voting behavior, it is argued that voters do not want to waste their votes. Thus, they would like to avoid voting for nonviable options that would not be able to gain a seat in the district or in the legislature. As Cox (1984) notes, when a voter must decide between voting for a weaker candidate that she prefers the most and a stronger candidate somewhat further than her preferred stand, the voter would choose the latter to not let the least favored candidate win the election.

Similarly, when the voters are short-term instrumentally rational actors with incomplete information about the other voters' preferences and with rational expectations about the stronger candidates, they behave strategically in a way that leads to the concentration of votes in a smaller number of parties. Cox (1984) demonstrates that

this strategic calculation by the voters decreases the effective number of parties.

It is not only the voters who are assumed to act strategically. The candidates are also strategic actors. The potential candidates strategically enter or withdraw from the electoral race. More specifically, they build a strategy of entry according to their expectations of how voters would vote in the election and the permissiveness of the district under question. Due to the voters' strategic defection from certain parties that they do not think can win the election, some parties and candidates would not join the race in the first place to avoid the costs of contesting. As such, this strategic behavior suppresses the effective number of parties. In addition to this instrumental rationality assumption, another important assumption in the literature is that both parties/candidates and voters should be able to foresee who is doomed to fail at a race. While this information is not publicly or privately available to its full extent and many voters make up their minds during the election campaigns, it is still a plausible assumption that prudent voters and candidates can at least know which parties would never have a chance of winning any seats.

As we are conducting a country analysis, among the electoral institutions listed above in light of Cox (1997), the only one with sufficient variation is the district magnitude. Not only because of this variation but also due to the literature we are primarily engaged in this study focuses on this electoral institution, we will analyze the "mechanical effect" of this particular institution. To do so, we will use Clark and Golder's (2006) model where the translation of votes into seats is analyzed by assessing the relationship between the effective number of electoral parties and that of legislative parties. Then, after assessing if there is any mechanical effect, we will examine how these institutional characteristics interacting with ethnic heterogeneity cause strategic behavior on part of the voters and candidates (parties).

Other important details that can also lead parties to enter an electoral competition should be noted here. Parties often do not have short-term visions. Thus, the short-term instrumental rationality assumption may not hold for some parties. One potential and regularly encountered motivation behind entering a race, despite almost certain nonviability, is to give the message that a particular issue or ideological position is owned by a party (Cox 1997). Thus, by entering the race, parties further emphasize their commitment to their ideological or issue position. Saadet Party, as the champion of the national outlook ideological position, can be given as an example of this kind of a long-term strategic approach towards elections. However, there might be other reasons for entering into the electoral competition even if the candidate does not have a rational chance of winning any seats. One important factor that we are interested in is the nationwide electoral threshold. While parties

in Turkey know that their vote shares will not reach a level beyond the natural threshold of exclusion in certain electoral districts, they still provide candidate lists in all of the primary electoral districts in order to ensure passing the 10% threshold.

A good example of such strategic behavior on part of the parties can be seen when the election strategies of the pro-Kurdish parties in our dataset are analyzed. Following five out of the six elections our dataset covers, the Kurdish parties managed to gain seats in the Grand National Assembly. In 2002, despite receiving 6.22% of all votes, the party could not manage to gain any seats in the Parliament due to the 10% nationwide threshold. Experiencing the same fate for three consecutive elections, despite increasing its vote share, the party decided to contest in the next elections with independent candidates. In this way, the pro-Kurdish party was able to circumvent the 10% threshold since the threshold applied only to party lists but not to independent candidates. The pro-Kurdish parties followed this strategy in the 2007 and 2011 general elections and following the June 2015 elections, it has competed in the elections as a party (the HDP) since they correctly assumed that their vote share would be above the 10% threshold.

We observe that Kurdish nationalist party HDP, to overcome the 10% threshold, wants to get as many votes as possible from every district, even though this would mean asking for some voters to waste their vote in the primary district level to ensure that all the votes received are not wasted. As such, in the 2002, June 2015, November 2015, and 2018 general elections, the party competed in every district in the country with a party list. However, at the 2007 and 2011 elections, the party competed only at 40 provinces with a total of 85 candidates. As such, parties and candidates cannot disregard the nation-level stakes when forming their strategies.

### **3.3.2 Geography Matters**

As Potter (2014) argues, cross-district heterogeneity might also be a significant factor determining district-level party system size. According to him, cross-district social heterogeneity can vary in a manner that affects politicians' and voters' motivations and strategic behavior. More specifically, in contrast to within-district heterogeneity, cross-district heterogeneity might have a negative effect on the number of district-level parties. This is because, while the literature assumes that within-district diversity acts as a natural social source pushing for the proliferation of parties, increasing cross-district heterogeneity would make it harder for a party to appeal to voters from different districts by using the same platform and campaign

strategy. Hence, the party should devise new campaigns and platforms for various regions, which can increase the material or reputational costs or both. To avoid these costs, parties stick to certain campaigns, issues, and ideological positions that do not attract voters in some parts of the country. Therefore, higher cross-district heterogeneity should suppress the effective number of parties since many parties participating in the election do not have a realistic chance of winning.

Similarly, Golosov (2016) demonstrates in his cross-national study that higher social diversity due to the concentration of different ethnic, religious, or linguistic groups in individual regions has a negative effect on party system nationalization. According to Morgenstern and his colleagues (2009), this negative effect is not only present for the whole party system but also individual parties' nationalization as well. The authors provide an explanation that points out to geographical diversity leading to more distinctive local groups and discontinuities in local responses to national political forces. As such, due to the reasons put forward by Morgenstern, Swindle, and Castagnola (2009) and Potter (2014), cross-district heterogeneity or geographical distributions would significantly affect the electoral success of parties in different parts of a country. As a country that has a heterogeneous ethnic composition in its regions, cross-district heterogeneity might affect the effective number of parties at the constituency level.

This brings us to a discussion on Turkey's electoral geography. As Çarkoğlu and Avcı (2002) and Şekercioğlu and Arikan (2008) put forward, Turkey's electoral geography can be summed up into three broad groups. Using election results from over several decades, Çarkoğlu and Avcı (2002) and Şekercioğlu and Arikan (2008) demonstrate that the Turkish electoral geography consists of a coastal region, an Eastern region, and a middle region. All those different socio-demographic structures lead different parties to succeed. Before delving deeper into the nature of this tripartite geographical division of the electorate, let me provide an explanation of the historical roots of the differing characteristics of these separate geographies.

?, in his proposal of a new framework for understanding the developments of the 19<sup>th</sup> and 20<sup>th</sup> century Ottoman Middle East, divides the empire into three separate geographical regions. According to him, these three geographies are the coastlines, inner regions, and borderlands. In his thesis, he argues that these geographies, due to both world-historical and idiosyncratic reasons, developed separate paths of modernization. These different modernization paths influenced the politics and public, economic and cultural dynamics of these geographical regions.

The first region he presents is the coastline. This coastline consists of the cities of the Eastern Mediterranean and the Aegean Seas. The examples such as Izmir, Thes-

salonica, and Beirut are some of the most prominent of those. The most important 19<sup>th</sup> century development at these portal cities had been the incorporation into the Mediterranean trade roots by global capitalist processes. While it was mostly the non-Muslim subjects of the Empire who were benefiting from these developments, a middle class had emerged and led to the formation of a new public sphere similar to those in 18<sup>th</sup> and 19<sup>th</sup> century Europe with its newspapers and saloons (i.e., kiraathanes). As such, the coastline region in its portal cities and their hinterlands built a dynamic middle class that consisted of both Muslim and non-Muslim subjects of the Empire, sharing a common cosmopolitan outlook.

The second region of interest to us is the inner areas. This region consists of inner Anatolia and wider Syria. Mainly consisting of Turkish and Arabic-speaking populations. The region, especially between 1840-1860 while several reform were taking place (most prominent of which are the land code of 1853, and the Tanzimat and Islahat edicts) lost its relative autonomy, that had once been enjoyed by the local notables and culminated in the Sened-i Ittifak in 1808. The reforms led this geography to have a stronger state presence with bureaucratic institutions under a Sunni-Islamic cultural banner. Thus, a more conservative but also a more consolidated inner region developed during this period. In contrast to the coastline, the 19<sup>th</sup> century transformation in this region was a product of the increasingly modernizing state apparatus.

Lastly, there were the borderlands of the Empire. These regions consist of the Eastern Anatolia, Northern Iraq, and Arabian Peninsula. What had been the common characteristic of these regions was the collective struggle against the centralist tendencies of the state with more heterodox religious understandings. Historically, these borderlands had never been under the direct control of the Empire but were ruled with more loose taxation mechanisms common to many early modern imperial settings. As such, when increased autonomy and even independence emerged as viable options, both theoretically (thanks to the ideas of nation-building and nationalism) and practically (due to the weakening of the central state's grip in the borderlands), these regions had managed to distance themselves from the path the inner regions followed.

During the Ittihad and Terakki rule (i.e., from 1908 to the collapse of the Empire), thanks to the movement's more nationalist and modernist measures, all three of these regional groups weakened to a certain extent. For example, the non-Muslim businesses in the coastal regions were replaced by a social group with a nationalistic stance. Furthermore, the state-institutional structure in the inner regions weakened during and after the First World War. However, the main socio-demographic char-

acteristics of these three separate regions passed to the nation-states in which they have lived. For our purposes, the Turkish Republic's borders include parts of all three regions: the coastal region, the inner region, and the borderlands. These three regions and their specific institutional and socio-cultural structure brought their heritages as the main cleavages of modern-day Turkey, which are strongly reflected in Turkish politics, including but not limited to electoral politics.

?’s (?) conceptualization of the developments of the late Ottoman Empire, can be seen as an alternative to that of Mardin (1973) who proposes a framework emphasizing the center and peripheral forces, which have long been dominant in Turkish politics. Even though Mardin’s account may still be considered as relevant, it does not offer a convincing account of the geographical pattern of electoral politics. As such, I consider Emrence’s framework not as an alternative but as complementary to Mardin’s (1973) account of the latent cleavages dominating Turkey’s party politics for almost three-quarters of a century.

Getting back to Çarkoğlu and Avcı (2002) and Şekercioğlu and Arikan’s (2008) description of the regionalization of the Turkish electoral geography, we observe a similar pattern to the one that emerged in the mid-19<sup>th</sup> century Ottoman Empire. According to Çarkoğlu and Avcı (2002), the Eastern and Southeastern parts of the country had been dominated by ethnic Kurdish or Islamist parties especially since the 1990s. The second region covers the coastline starting from the Black Sea to the Eastern Mediterranean, including the provinces in Trace and on the Aegean coast. This region, compared to the other two regions, shows higher diversity in terms of the party families that acquire seats. The third region is the large number of provinces that lie between these two regions and are the electoral base for nationalist and right wing parties. As Çarkoğlu and Avcı (2002) emphasize, these three regions vary both in their sociodemographic characteristics and their political preferences. Therefore, we would expect them to perform differently, regarding the interactive effect of ethnic heterogeneity and electoral district permissiveness on party system size. This is because our two dependent variables in this study (i.e, effective number of electoral parties and that of legislative parties) differ systematically by these three regions. Not including this dimension, which has been emphasized by Potter (2018) as cross-district heterogeneity, would be omitting an important part of the variation.

In this study, I focus on a single social cleavage in Turkey, (i.e., the Kurdish-Turkish ethnic divide). As mentioned in the previous chapter, while a lack of country-specific knowledge may necessitate an a priori agnostic approach that takes into account several dimensions and their interactions, this can lead to further error in our measurement of social diversity. In single-country cases where we know the

salient cleavages in the society, it is better to focus on those. As such, in the time frame of our dataset, there are two main cleavages. These are, as explained above, the secular-conservative and Kurdish-Turkish cleavages (Çarkoğlu and Hinich 2006). Ideally, one would like to take both into account. However, I could not find a reliable measure of secularism-conservatism at the district level. One potential solution could be implementing the approach that I used in the previous study and get an overall score of social diversity based on these two social dimensions. However, this approach would not ensure that our findings were representative at the district-level. Therefore, instead of implementing such a strategy, I focused only on a single dimension (i.e., ethnic heterogeneity) that I can more accurately estimate for each district. Finally, as I assess the different outcomes in the three regions, and since those also correlate with religiosity and ethnic cleavages and their interactions, I believe I have managed to take this second cleavage (i.e., conservative – secular) into account.

### 3.4 Data and Measurement

#### 3.4.1 Independent Variables

The main independent variables of this study are district magnitude and ethnic heterogeneity. In the empirical analyses I used the logarithm of the district magnitude (similar to Ordeshook and Shvetsova 1994, Clark and Golder 2006) and used the effective number of ethnic groups to measure ethnic diversity.

**District Magnitude:** The source of the district magnitudes is the CLEA (Constituency Level Elections Archive) dataset. In the estimation strategy, instead of using the magnitudes as they are, I used the logarithm of the values because after a certain point, the increase of the magnitude should not lead to a further increase in the number of parties. As such the relationship between party system size and district magnitude is theorized as nonlinear (Ordeshook and Shvetsova 1994).

**Effective number of ethnic groups:** As a measure of ethnic diversity, I used the effective number of ethnic groups. The calculation of the effective number of ethnic groups is straightforward:  $efeg = \frac{P_i^2}{k_i^2 + t_i^2}$ , where  $P_i$  is the total population of constituency  $i$  whereas  $k_i$  and  $t_i$  are the number of Kurdish and Turkish citizens in

district  $i$ .

The data for ethnic diversity are estimated values. The estimation process is the same as Arıkan Akdağ (2013)'s procedure and it is as follows: first, based on Mutlu (1996), I assigned a Kurdish population share to every province. Then, by using TURKSTAT's data for the residents' places of registration I estimated the number of Kurds in each constituency by multiplying the assigned Kurdish population share with the number of citizens coming from each province and then summed those values to come up with the number of Kurdish citizens residing at different constituencies. For the provinces that did not exist on the time of Mutlu's (1996) research, I assigned the average value of the provinces from which the new provinces were separated (Arıkan Akdağ 2013). For provinces where there are more than a single electoral district, I did the same calculation for the district (i.e., ilçe) level and then summed the estimated populations of each district that comprise an electoral district. In a mathematical formula the estimation process is as the following:

$$\sum_{i=1}^n X_i Y_i$$

where  $n$  denotes the number of provinces in Turkey;  $X_i$  is the number of residents in the given province (or district) that are registered to the  $i_{th}$  province and  $Y_i$  is the number of estimated percentage of Kurdish population in the  $i_{th}$  province.

**Effective number of presidential candidates:** As previous studies demonstrate, the number of presidential candidates influences the party system size. Same as the previous chapter, in order to account for the vote distribution among the presidential candidates I incorporated Laakso and Taagepera's (1979) effective number of parties measure to calculate the effective number of presidential candidates. Since Turkey had only 2 presidential elections in the time span of our dataset (i.e., 2014 and 2018 elections) I assigned the each observation the score of the closest presidential election. In practice, this means I assigned all observations other than the observations from 2018 with the effective number of presidential candidates in the 2014 presidential elections. For the observations from the 2018 election, I assigned the 2018 presidential election's effective number of presidential candidates score.

**Proximity of presidential and parliamentary elections:** According to previous studies in the literature (e.g., Cox 1997; Clark and Golder 2006) the effect of the number of presidential candidates is moderated by the proximity between presidential and parliamentary elections. Thus, I include a proximity variable as another explanatory variable. The values of the proximity variable range from 0 to 1 such that the greatest temporal distance gets the value of 0 and the cases of concurrent elections get the value of 1. Again, since there are only two elections during our

period of interest observations from all elections other than the 2018 parliamentary election were assigned a value based on their temporal distance to the 2014 presidential election and observations from the 2018 parliamentary election were assigned a value based on the distance between the parliamentary election of 2018 and the presidential election of 2018.

### 3.4.2 Dependent Variables

**Effective number of electoral parties:** The source of the data is the Supreme Election Council’s official records. The data cover 6 general elections that took place between 2002 and 2018. After getting the number of electoral parties from each electoral district, I applied Laakso and Taagepera’s (1979) measurement with the following formula:  $enep = \frac{T_i^2}{\sum_{p=1}^n v_{ip}^2}$ , where  $T_i$  is the total valid votes in an electoral district  $i$  whereas  $v_{ip}$  is the number of votes  $p^{\text{th}}$  party received in district  $i$ .

**Effective number of legislative parties:** The source of the data is the Supreme Election Council’s official records. The data cover 6 general elections that took place between 2002 and 2018. After getting the number of electoral parties from each electoral district, I applied Laakso and Taagepera’s (1979) measurement with the following formula:  $enlp = \frac{T_i^2}{\sum_{p=1}^n s_{ip}^2}$ , where  $T_i$  is the total available seats in an electoral district  $i$  whereas  $s_{ip}$  is the number of seats  $p^{\text{th}}$  party received in district  $i$ .

## 3.5 Empirical Analyses and Findings

### 3.5.1 Mechanical Modifying Effect

As Clark and Golder (2006) explain succinctly, Duverger argues that elections affect the number of parties through a two-stage process. First, there is the mechanical effect, where votes translate into seats. Given their expectations about the mechanical effect, voters and candidates act strategically and this strategic behavior reduces the number of parties (i.e., strategic effect). Since the strategic effect is contingent on

the mechanical effect, I first examine the mechanical effect of electoral institutions in Turkey. Both the theoretical accounts (e.g., Duverger 1959; Cox 1997) and empirical research (e.g., Clark and Golder 2006) inform our expectations that the mechanical effect should be a translation of votes into seats in a way that the effective number of legislative parties would be smaller than that of electoral parties. Furthermore, the more permissive an electoral context is, the less we should observe this negative mechanical effect. These expectations lead to the following hypotheses:

H<sub>1</sub>: The marginal effect of the effective number of electoral parties on the effective number of legislative parties, conditional on district magnitude, is positive and less than 1.

H<sub>2</sub>: The positive effect of the effective number of electoral parties on the effective number of legislative parties is higher in districts with larger magnitudes.

### **Estimation Strategy**

$$\begin{aligned} \text{Effective Number of Legislative Parties} = & \\ & \beta_0 + \beta_1 \text{Effective Number of Electoral Parties} + \beta_2 \text{Log(Magnitude)} \\ & + \beta_3 \text{Effective Number of Electoral Parties} \times \text{Log(Magnitude)} + \epsilon \end{aligned}$$

The dependent variable of this analysis is the effective number of legislative parties. The main quantities of interest are the interactive effect of the effective number of electoral parties and the log of district magnitude. To properly analyze this interactive effect, the model must include both the two constitutive terms and the interaction term. In addition to the parameters above, due to the panel nature of our dataset, I estimate both fixed- and random-effects models. Then, in order to decide on which of these models I should proceed with, I conduct a Hausman test. The Hausman test suggests that the use of the fixed-effects model would be more appropriate for this study. As such, in the following analyses I present and comment on the results from the fixed-effects specification. The model specified for the three regional sub-samples of the data are same as the one used for the full sample.

In Table 3.1's first column we see the outputs from the fixed-effects model for the full sample. The effective number of electoral parties variable is positive and statistically significant at 95% confidence level. While this might appear as a finding in support of our theoretical expectations, we cannot reach any conclusions from this estimate. This is because the coefficient under question gives us the estimated relationship between effective number of electoral parties and the effective number of legislative parties only for observations where the log of district magnitude is 0. In our dataset there are only three observations coming from 2 districts that have a district magnitude of 1 (i.e.,  $\log(\text{district magnitude}) = 0$ ), these are Bayburt and

Table 3.1 OLS Estimates on the Effects of Effective Number of Electoral Parties and District Magnitude on the Effective Number of Legislative Parties

	Turkey	Coastal	Middle	Eastern
Effective Number of Electoral Parties	0.113* (0.055)	0.063 (0.126)	0.047 (0.078)	0.069 (0.114)
District Magnitude (Log)	1.701*** (0.378)	4.957*** (0.949)	1.046* (0.514)	0.208 (1.186)
Effective Number of Electoral Parties $\times$ District Magnitude (Log)	-0.233** (0.075)	-0.265 (0.138)	-0.153 (0.128)	0.066 (0.167)
Constant	0.872*** (0.260)	-1.626 (0.930)	1.230*** (0.304)	1.258 (0.722)
N	512	121	301	90
$R^2$ (Within)	0.054	0.351	0.020	0.113
$R^2$ (Between)	0.307	0.313	0.172	0.084
$R^2$ (Overall)	0.195	0.207	0.070	0.103

Standard errors in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , two-tailed tests.

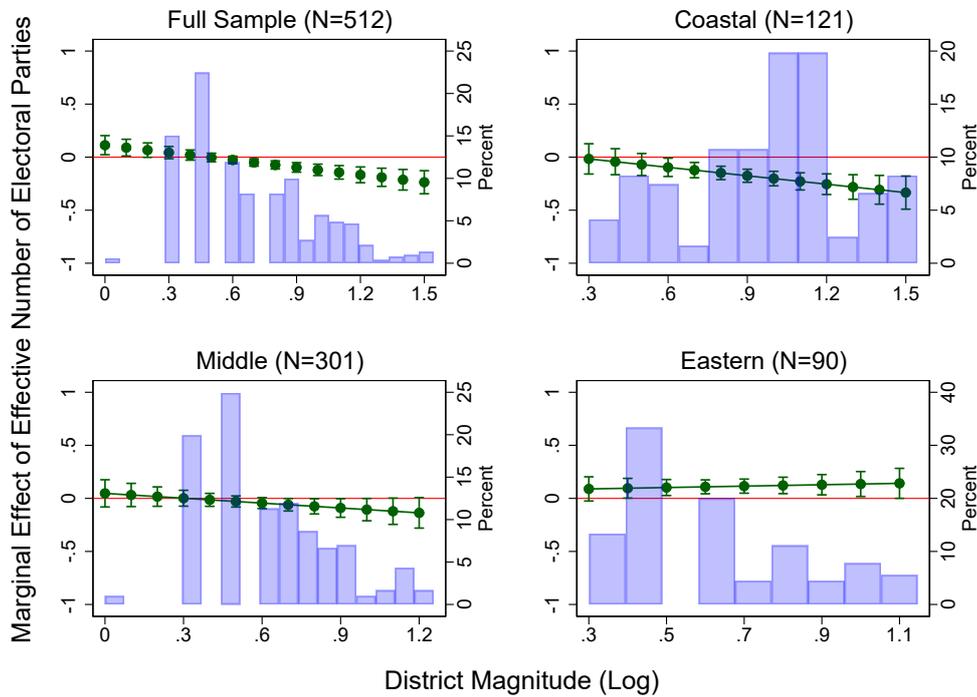
Çankırı. Similarly, the coefficient of the log of district magnitude variable gives us the estimated effect of an increase in the district magnitude when the effective number of electoral parties is 0. This refers to no cases both in the theoretical sense and in our dataset. As such, we proceed to commenting on the marginal effects estimates.

As noted above, we are mainly interested in the interactive effect of district magnitude and the effective number of electoral parties. However, the coefficient of the interaction term does not provide us with the information we seek. That is, we do not get the marginal effect estimates of the effective number of electoral parties on the effective number of legislative parties at different levels of the log of district magnitude. In order to properly analyze these marginal effects, we need to calculate and plot the marginal effects of the effective number of electoral parties to see the change in the marginal effects in different values of the log of district magnitude.

Figure 3.1 consists of the 4 marginal effects plots for each of the 4 samples. In the upper left panel where we employ the full sample, we see that despite a small positive and significant effect at lower magnitudes, as the magnitude increases the marginal effect first becomes indistinguishable from zero and then turns negative and becomes statistically significant. For all the other three sub-samples, our models' outputs are quite similar and all of these results are against our theoretical expectations in our first and second hypotheses. In other words, we fail to reject the nulls of our hypotheses 1 and 2.

The primary suspect of this counter intuitive and theoretically unexpected finding, which is also against the findings from previous empirical research, is the 10% nationwide threshold in Turkey. In election systems where there is no threshold at the

Figure 3.1 Marginal Effect of the Effective Number of Electoral Parties on the Effective Number of Legislative Parties | District Magnitude (Logged) (90% Confidence Level)



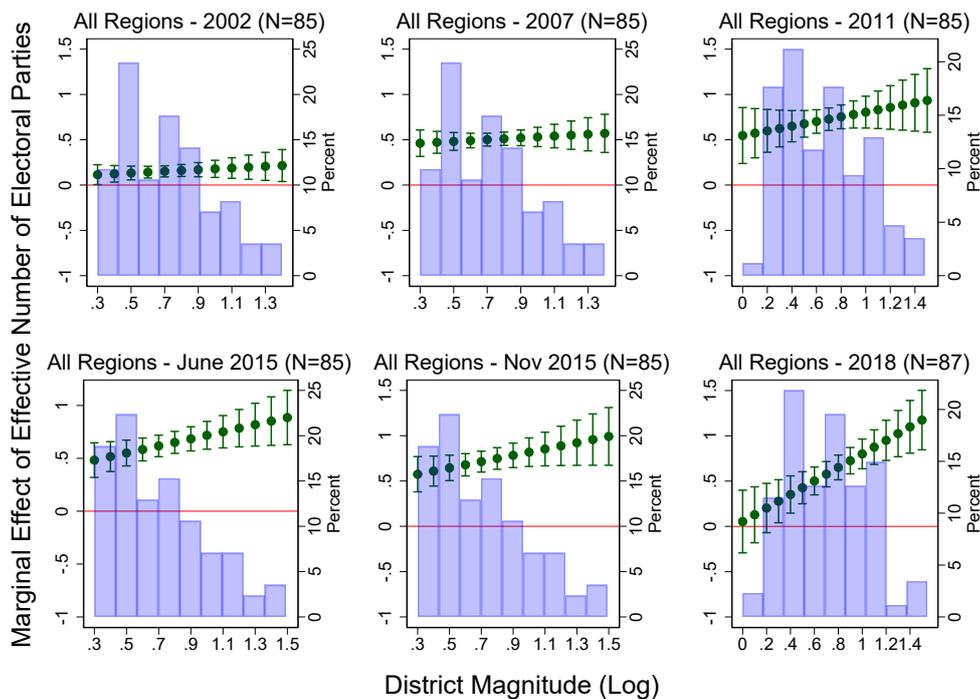
national level, the only threshold of concern is the threshold of exclusion, which is negatively correlated with the number of seats in a district. In that case, there should be a positive association between the effective number of electoral parties and that of legislative parties. Moreover, for districts with greater magnitude, due to greater permissiveness, we would also expect this positive association to be greater. Thus, if there was not a national threshold, we would expect our two hypotheses to find support.

The argument that the unexpected results are due to the 10% threshold could be true if two things were also true in our sample. The first is that, on average, the increase in the effective number of electoral parties should not have a positive effect on the effective number of legislative parties. Secondly, in large districts, increases in the effective number of electoral parties should be negatively associated with the effective number of legislative parties. These two can happen if there are many parties which could not surpass the 10% threshold and that these parties mostly compete in larger districts. Since these parties cannot get any seats, the seats that they would acquire if the national threshold had not existed are assigned to the already dominant parties in those districts that managed to surpass the nationwide electoral threshold. This ultimately leads to a non-positive relationship between the

effective number of electoral parties and that of legislative parties, and for larger districts (i.e., greater permissiveness) this association becomes even negative as our findings suggest in Figure 3.1.

While this is a possible scenario that could be the explanation of these theoretically unexpected findings, our data do not support it. In our dataset, we observe that other than the 2002 election, parties that received vote shares below the 10% threshold got very small proportions of the total vote, making them unlikely to significantly influence the effective number of electoral parties that could lead to the negative association described above. Moreover, even if we assume that all the findings are all due to the observations from the 2002 election, it should be that the small parties which were right below the national threshold had electoral bases concentrated primarily in large districts. However, this was not the case, the small parties were able to acquire similar vote shares in many of the relatively small districts. Furthermore, as we can see in Figure 3.2 below, for each election, including the 2002 elections, the estimated marginal effects are always greater and statistically significantly distinguishable from zero. If the electoral bases of small parties were concentrated only in large districts, we would expect the marginal effects for the 2002 elections to have negative large slopes.

Figure 3.2 Marginal Effect of the Effective Number of Electoral Parties on the Effective Number of Legislative Parties | District Magnitude by Election (90% Confidence Level)



Despite not having a negative slope, the marginal effects for the 2002 elections are consistently lower than those for the other elections. In other words, in the 2002 elections, for all levels of the district magnitude variable, the positive association between the effective number of electoral parties and that of legislative parties was smaller compared to all other elections. Compared to the other five elections in our dataset, the effective number of electoral parties is almost always greater in each district in the 2002 elections with an average of 4.72 parties (the average of the remaining elections is 2.79). This difference reflects the fact that Turkey’s party system was highly fragmented during 1990s and was considered as a predominant party system in the 2000s (Gumuscu 2013). Moreover, while in the 2002 elections the effective number of legislative parties almost never gets a value higher than 2, in contrast to the all other elections which have an average of 1.95 by district. This is due to the 10% nationwide threshold that prevented parties such as GP, DYP, and MHP which had vote shares close to 10 to acquire any seats in the 2002 elections. In contrast, in the following elections the opposition parties like HDP (or independent candidates), IYIP, and MHP managed to get seats by surpassing or circumventing the 10% nationwide threshold which increased the effective number of legislative parties considerably.<sup>1</sup>

These two peculiarities of the 2002 general elections lead to the unexpected findings in Figure 3.1. This is because in our dataset, higher effective number of electoral parties (which are all from the 2002 election) leads to a lower effective number of legislative parties. This makes the marginal effects to be pressured downward and never become positive and statistically significant. Thus, this made us fail to reject the null of Hypothesis 1.

The underlying distribution of the observations from the 2002 election can also help explain why greater district magnitudes are associated with lower and eventually negative marginal effects. In the other elections as the district magnitude increases, due to greater permissiveness, the ratio of effective number of legislative parties and that of the electoral parties increases. However, in the 2002 election, greater permissiveness of larger districts does not lead to a higher effective number of legislative parties because only two parties in the whole nation became eligible to get parliamentary seats. Thus, as the district magnitude increases we see that for observations with large effective numbers of electoral parties (i.e., observations from the 2002 election) have almost constant effective numbers of legislative parties (i.e., values approaching to 2), whereas for lower levels of the effective number of electoral

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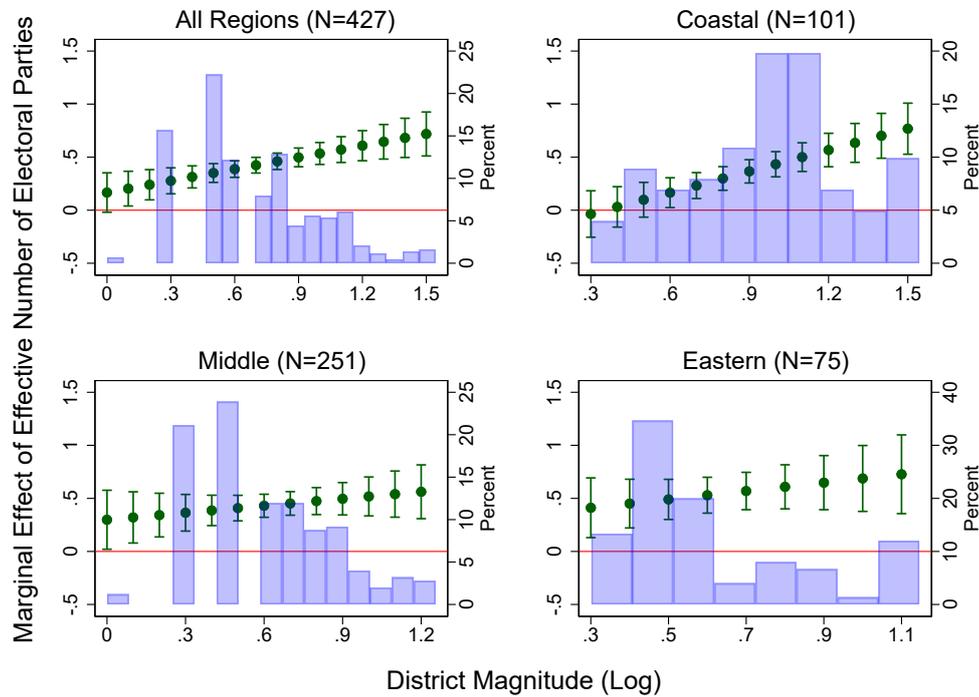
<sup>1</sup>The 2018 elections onward, due to the then newly introduced “coalition law,” parties that are part of a coalition but have a vote share lower than 10% can still get into the parliament if their coalition receives more than 10% of the total vote.

parties increasing district magnitude leads to large effective number of legislative parties. As such, we see the negative slope in the marginal effects plots in Figure 3.1, leading us to fail to reject the null of Hypothesis 2, too.

Looking at Figures 3.2 and 3.3, we find strong and partial support, in turn for hypotheses 1 and 2. We see that there is always a positive and statistically significant relationship between effective number of electoral parties and that of legislative parties in all election years and regions. This leads to us conclude that Hypothesis 1 finds strong support. However, even though we see a consistently positive relationship, we cannot say that the hypothesized conditioning effect of district magnitude on the relationship between effective number of electoral parties and that of legislative parties is observable in all of elections in Figure 3.2 and each region in Figure 3.3. More specifically, in the plots for 2002, 2007, 2011, and November 2015 elections in Figure 3.2 and the plot for Eastern region in Figure 3.3, the confidence intervals of the estimated marginal effects at different values of the district magnitude variable overlap. This prevents us from concluding that the conditioning effect of district magnitude on the relationship between effective number of electoral parties and that of legislative parties is statistically significant. In other words, the plotted estimated effects in the graphs for the elections and region mentioned above allow us to conclude that there is a significant direct effect of the effective number of electoral parties on the effective number of legislative parties but those do not provide sufficient evidence for that this positive relationship is stronger in more permissive districts. Therefore, while we find strong support for Hypothesis 1, the evidence supporting Hypothesis 2 is at best partial. However, I should note that the other two panels in Figure 3.2 and three panels in Figure 3.3 support Hypothesis 2 and the marginal effect estimates for those panels that do not show statistically significant results are almost always in the expected direction.

The plotted marginal effects from the other elections suggest that the 2002 election was an exogenous shock caused by the nation-level strategic coordination failure which made both the voters and the candidates change their expectations about the parties that might have a chance of winning seats in the following elections. Thus, even though we find support for a mechanical effect, as discussed above, we see that Cox's (1997) and Duverger's (1959) assumptions about the parochial nature of the strategic behavior of the voters and candidates is not likely to hold in the cases where there are nationwide electoral institutions that can easily shape election outcomes in individual districts. Therefore, both the strategic entry decisions of candidates (parties) and strategic voting behavior of voters might not comply with those proposed by a district-level logic, especially when there is a major re-alignment as a result of an exogenous shock.

Figure 3.3 Marginal Effect of the Effective Number of Electoral Parties on the Effective Number of Legislative Parties | District Magnitude (2002 Elections Excluded) (90% Confidence Level)



Before moving to the analysis of the strategic modifying effect of electoral institutions, in Figure 3.3 we can analyze the marginal effects calculated from the samples excluding the 2002 elections. Similar to the plots in Figure 3.2, we see that in all of the (limited) samples, the positive relationship between the effective number of electoral parties and that of legislative parties exists (in line with our first hypothesis). However, we do not find such a consistent support for our second hypothesis across all three of our regions. As it can be seen in Figure 3.3, while in the coastal and middle regions higher district magnitudes lead to higher marginal effect estimates, we see that the marginal effects are constant across the range of the district magnitude variable in Eastern districts. In the Eastern region, where the Kurdish population constitutes the majority, as discussed above, the votes are shared among two party families (i.e., Islamist and Kurdish Nationalist) (Çiçek 2013). Therefore, candidates from other parties do not have any chance of winning seats in larger districts in this region, which causes the marginal effects to remain constant across the in-sample range of the district magnitude variable. This also demonstrates how cross-district differences in social heterogeneity can influence party system size at the district level, as emphasized by previous studies (e.g., Potter (2018)).

### 3.5.2 Strategic Modifying Effect

When it comes to parties' strategic entry decisions, the 10% nationwide threshold makes district-level strategic calculations almost irrelevant. This is because, for a party to gain representation in the parliament, surpassing this legal threshold is a necessary condition. Therefore, opposition parties like the HDP, MHP, and IYI that have received vote shares around the 10% threshold nationwide, still participate in electoral competition in districts where they may not have any realistic chance of winning the seats. This makes the number of electoral parties (not the effective number of electoral parties) remain the same almost in each district. This also incentivizes voters to vote for their most favored party even if they do not have any chance of making their party win a seat in their own district. More importantly, due to the 10% nationwide threshold, voters are also mostly concerned about making their party gain representation in the Grand National Assembly, instead of making their votes count in their own districts. Therefore, it is highly unlikely that the voting behavior of the Turkish electorate would be in line with the constituency-level strategic behavior as assumed by Duverger (1959) and explained by Cox (1997). The analyses in the previous section show, when parties and voters cannot accurately predict the nation-level electoral outcomes, they can experience great strategic failure (as was the case in the 2002 general elections). Thus, we would expect the Turkish electorate and parties to form their strategies based on these factors as well. As such, the empirical analyses may not show findings in support of the famous hypothesis put forward by Duverger himself (1959).

H<sub>3</sub>: When the electoral system is sufficiently permissive, higher ethnic heterogeneity would lead to a higher effective number of electoral parties.

In order to examine the constituency-level strategic behavior of the candidates/parties and voters, I adopt the same model from Clark and Golder (2006).

#### Estimation Strategy

$$\begin{aligned} \text{Effective Number of Electoral Parties} = & \\ & \beta_0 + \beta_1 \text{Effective Number of Ethnic Groups} + \beta_2 \text{Log(Magnitude)} \\ & + \beta_3 \text{Effective Number of Ethnic Groups} \times \text{Log(Magnitude)} \\ & + \beta_4 \text{Effective Number of Presidential Candidates} + \beta_5 \text{Proximity} \\ & + \beta_6 \text{Effective Number of Presidential Candidates} \times \text{Proximity} + \epsilon \end{aligned}$$

The dependent variable in this model is the effective number of electoral parties. We are mainly interested in the interactive effects of district magnitude and effective number of ethnic groups on the effective number of electoral parties. In order to

estimate this effect, we include both constitutive terms and the interaction term in the model. Moreover, in line with previous studies, I add the effective number of presidential candidates and proximity between presidential and parliamentary elections variables and their interaction term to the model. Furthermore, due to the panel nature of our dataset, I conducted a Hausman test between a fixed- and a random-effects model with the same parameters, the test suggests the use of the fixed-effects model. I thus proceed the analysis with the fixed-effects specification. Lastly, I also split the sample into three and estimate the coefficients for each region separately, as I argue that the party systems of the three regions differ from each other. By doing so, I am also practically creating a three-way interaction between ethnic heterogeneity, district magnitude, and electoral region.

Table 3.2 OLS Estimates on the Effects of Effective Number of Ethnic Groups and District Magnitude on the Effective Number of Electoral Parties

	Turkey	Coastal	Middle	Eastern
Effective Number of Ethnic Groups	2.813 (2.336)	5.121 (7.356)	0.551 (3.201)	21.013* (9.187)
District Magnitude (Log)	-3.602 (2.574)	-8.110 (6.282)	-0.988 (3.621)	32.860 (21.549)
Effective Number of Ethnic Groups $\times$ District Magnitude (Log)	2.435 (2.026)	9.046 (4.802)	0.383 (3.007)	-17.967 (12.397)
Effective Number of Presidential Elections	2.753*** (0.289)	1.708** (0.530)	2.848*** (0.341)	2.016*** (0.927)
Proximity	-2.182*** (0.081)	-3.130*** (0.195)	-1.880*** (0.108)	-2.099*** (0.314)
Constant	-5.311 (2.928)	-7.958 (8.503)	-2.898 (3.734)	-37.708* (15.743)
N	512	121	301	90
$R^2$ (Within)	0.650	0.853	0.624	0.610
$R^2$ (Between)	0.036	0.093	0.001	0.003
$R^2$ (Overall)	0.065	0.143	0.421	0.062

Standard errors clustered by country in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , two-tailed tests.

In the first column of Table 3.2, we can observe the estimated coefficients for the full sample. As explained above, the estimates for the effective number of ethnic groups and the log of district magnitude alone are not useful to make any meaningful inferences. This is because they are the coefficients for the respective variables when the other constitutive variables take the value of zero. In our sample, there are only two districts (and three observations) with such magnitude. Similarly, the coefficient estimate of the constitutive term is the marginal effect of district magnitude in districts where the effective number of ethnic groups is zero. Since the effective number of ethnic groups variable takes values between 1 and 2, the coefficient of the log of district magnitude does not provide us any relevant information. Furthermore, the estimated coefficient for the interaction term does not allow us to understand the nature of the relationship that we are interested in. That is, we cannot infer the

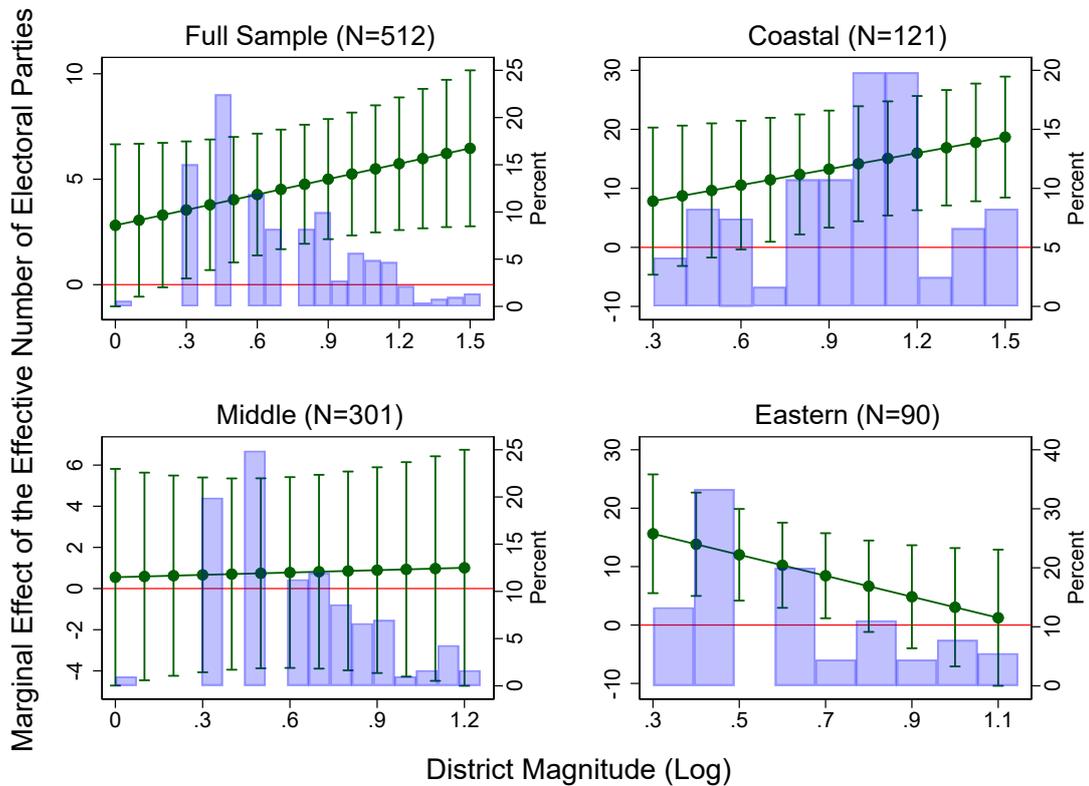
marginal effect of ethnic heterogeneity on party system size conditionally on district magnitude by simply looking at the coefficient estimate. We need to calculate the marginal effect of ethnic heterogeneity on party system size at different levels of the log of district magnitude variable.

When it comes to the analysis of the coefficients for the effective number of presidential candidates, proximity, and their interaction term one would normally make similar comments to those above. However, when the two constitutive terms and the interaction term are included in the same model, the interaction term is omitted. This is because the effective number of presidential candidates variable takes the same value for observations from five of the examined elections (i.e., elections between 2002 to June 2015), this makes the interaction term to vary almost based only on the value of the proximity variable. As such, the interaction term we added to the model is omitted due to multicollinearity. Therefore, the interactive effect we hypothesize (if exists) is included in the coefficient estimates of the two constitutive terms. From these coefficients we can conclude that a high number of presidential candidates have a statistically significant effect on the effective number of parties and that the effect of proximity is negative and statistically significant. Note that there were only two presidential elections during this period. Thus, we should refrain from making any conclusive remarks based on these findings. Lastly, all the comments above on the estimates for the full sample apply to those from the other three regional samples. Therefore, I will now proceed to the interpretation of the marginal effects in Figure 3.4.

Figure 3.4 shows the marginal effects plots for each of the four different samples. The upper-left panel is the marginal effects plot for the full sample. The marginal effect estimates for the effective number of ethnic groups on the effective number of electoral parties increases with the district magnitude and it is positive and statistically significant after a certain magnitude (i.e., log of district magnitude = 0.4). This means that our third hypothesis finds support. However, as discussed above in detail, different regions of the country constitute different electoral geographies and the expected relationship might not be observed in all such regions. Hence, analyzing the three regions separately can allow us to better test all our theoretical expectations.

In the upper right panel of Figure 3.4, we observe that the effective number of ethnic groups has a positive and significant marginal effect on the number of parties after a certain magnitude (i.e., district magnitude (log) = 0.7) for the coastal region. This finding is in line with our theoretical expectations and supports our hypothesis that ethnic heterogeneity has a positive effect on the party system size when a district is

Figure 3.4 Marginal Effect of Ethnic Heterogeneity on the Effective Number of Electoral Parties | District Magnitude (90% Confidence Level)



sufficiently permissive. Moving on with the the lower left panel where we can observe the marginal effect of ethnic heterogeneity on the effective number of electoral parties for the Middle region, we see that the marginal effect estimates are almost always at the same level for the in-sample range of the district magnitude and they are never statistically significantly distinguishable from zero. As this sub-sample consists of the highest number of observations, we cannot attribute these insignificant findings to the low power of our analysis. One potential explanation for this null effect might be that in ethnically less heterogeneous districts, the electoral competition is between AKP and other right wing parties such as the MHP and IYIP; while in more ethnically heterogeneous districts it is between AKP and HDP, making any influence of ethnic heterogeneity obsolete. However, this would also suggest that the middle region does not have consistent electoral characteristics, making our tripartite regional classification questionable. Another potential explanation is that in this region, higher levels of ethnic heterogeneity does not lead to higher HDP vote shares because the Kurdish population in this region might be inclined to vote for the Islamist party, and since we are not controlling for the religiosity cleavage, we cannot observe the offsetting effect of one cleavage over another. Lastly, when we take a look at the lower right panel which shows the marginal effect of ethnic heterogeneity

at varying district magnitudes in the Eastern region, we can see the findings are never statistically distinguishable from zero. This suggests we cannot find support for our hypothesis in this region as well. The main cause of this null finding might again be the offsetting effect of religiosity (i.e., crosscutting the ethnicity cleavage in the region), making the variation of the effective number of electoral parties low enough to wipe out any potential effect.

### 3.5.3 Kurdish Strategic Entry and Voting

Even though our findings in the previous section show that ethnic heterogeneity affects party system size after a certain level of permissiveness and depending on the region of interest, I argue that this effect is not a result of the strategic calculations of candidates or voters. The reason is that in the Turkish case, as noted above, there is a 10% nationwide threshold, incentivizing parties to field candidates even in districts where they do not have a chance of acquiring any of the seats (similarly making the voters to vote for their most preferred parties even if they know for sure that the party they vote for does not have a chance of getting a seat in their own district). As such, the model put forward by Clark and Golder (2006) and the quantities that have conventionally been analyzed in other contexts, does not provide us with a proper tool to analyze the strategic behavior of the Turkish electorate and parties. Thus, the statistically significant marginal effects in the previous section is unlikely to be due to the strategic calculations of political actors based on their district-level expectations. In the presence of a nationwide threshold as high as 10%, the optimal strategy is to vote for the party one most prefers to get more than 10% of the total vote share. This nation-level consideration makes the marginal effect estimates in Figure 3.4 an outcome of almost a mechanical procedure: districts with higher ethnic heterogeneity have higher effective numbers of parties not because of the strategic entry decisions of the parties but simply because there are different constituencies in the same district, and, as for greater magnitudes, this positive effect increases in magnitude due to greater permissiveness.

In order to see if the district-level strategic instrumental rationality assumed by Duverger (1959) and proposed by Cox (1997) ever existed in the Turkish context, we can look at a sub-sample of our dataset. That is, we can look at the entry decisions of independent candidates associated with the Kurdish parties DTP and BDP in the 2007 and 2011 elections.

Our findings above suggest that there is indeed a mechanical effect (i.e., higher

effective number of electoral parties leads to a higher number of legislative parties, and in many instances this positive effect is more substantial in more permissive districts). Since we know that there is a positive mechanical effect, we can expect independent candidates affiliated with the Kurdish parties and supporters of those parties to base their strategies according to this mechanical effect.

### 3.5.3.1 Strategic entry decision

Assuming that the Kurdish parties make their entry decisions based on a district-level rationality, we would expect to see a positive relationship between the number of independent candidates affiliated with the Kurdish parties and the effective number of ethnic groups in the district. Moreover, these parties would field more candidates in more permissive districts. Thus, we can posit the following hypothesis:

H<sub>4</sub>: The positive association between ethnic heterogeneity and the number of independent candidates affiliated with Kurdish nationalist parties is higher in districts with higher magnitudes.

#### Estimation strategy

In order to test this expectation regarding the strategic entry of the independent candidates affiliated with Kurdish parties, I will use the following model:

$$\begin{aligned} \text{Number of (Kurdish) Independent Candidates} = & \\ & \beta_0 + \beta_1 \text{Effective Number of Ethnic Groups} + \beta_2 \text{Log(Magnitude)} \\ & + \beta_3 \text{Effective Number of Ethnic Groups} \times \text{Log(Magnitude)} \\ & + \beta_4 \text{Effective Number of Presidential Candidates} + \beta_5 \text{Proximity} \\ & + \beta_6 \text{Effective Number of Presidential Candidates} \times \text{Proximity} + \epsilon \end{aligned}$$

Similar to the analyses in the previous sections, we are interested in the interactive effect of the effective number of ethnic groups and the logged district magnitude. In order to see if we find any support for our expectations, we need to interpret the marginal effects in Figure 3.5.

The total number of observations for this analysis is 170 (85 districts in each election). In 85 of the districts the Kurdish party participated in elections with 1 to 6 independent candidates. For the remaining 85 districts the number of independent candidates representing the Kurdish movement is 0.

Figure 3.5 Marginal Effect of Ethnic Heterogeneity on the Number of Independent Candidates Aligned with Kurdish Parties (90% Confidence Level)

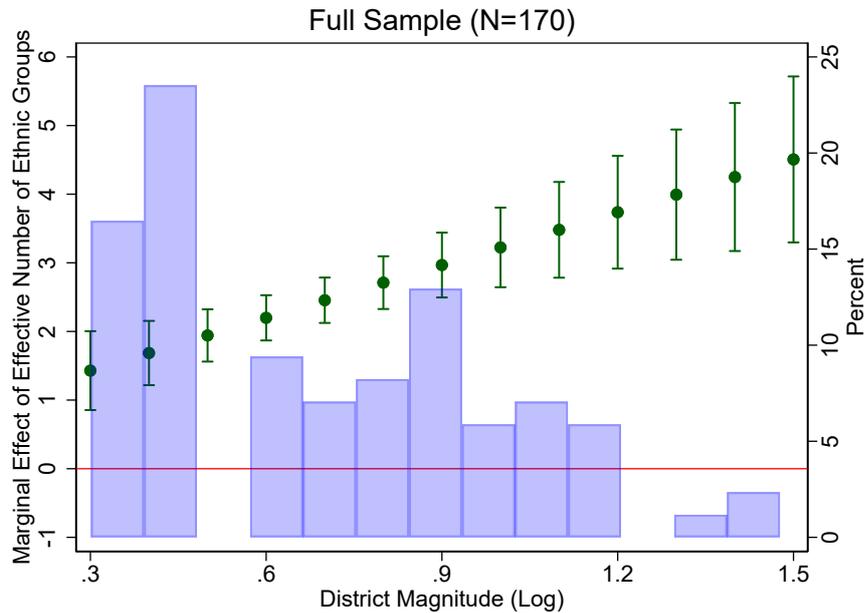
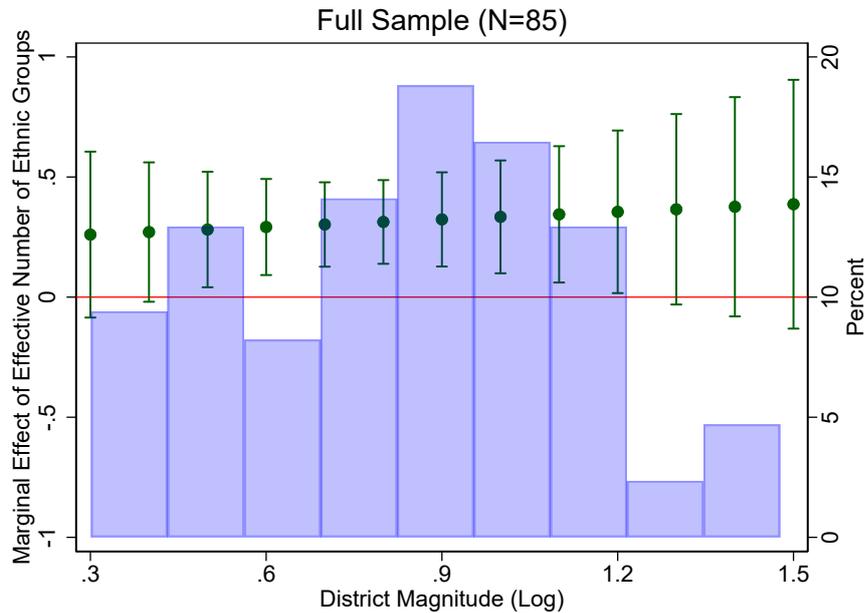


Figure 3.5 plots the marginal effect of the effective number of ethnic groups on the number of independent candidates affiliated with the Kurdish movement in 2007 and 2011 elections. These findings suggest that the number of independent candidates representing Kurdish parties in the examined elections are positively associated with the effective number of ethnic groups at every level of the moderating variable (i.e., District Magnitude (Log)). Moreover, this positive association gets substantially more significant at higher levels of the district magnitude variable, suggesting that Kurdish parties were indeed taking into account the permissiveness of the district before making the entry decision. Thus, our Hypothesis 4 finds empirical support.

### 3.5.3.2 Strategic voting decision

Similar to the strategic entry decision of the independent candidates affiliated with the Kurdish movement, we can also expect the supporters of the Kurdish nationalist parties to vote strategically. If this is the case, we should observe a positive association between ethnic heterogeneity and the proportion of votes received by independent candidates in individual districts. Moreover, this positive association should be substantially more significant in larger districts. Thus, we can posit the following hypothesis:

Figure 3.6 Marginal Effect of Ethnic Heterogeneity on the Independent Votes/Total Votes Ratio (90% Confidence Level)



H<sub>5</sub>: The positive association between ethnic heterogeneity and the vote share of independent candidates is substantially higher in districts with higher magnitudes.

### Estimation strategy

Independent Votes Share =

$$\begin{aligned} & \beta_0 + \beta_1 \text{Effective Number of Ethnic Groups} + \beta_2 \text{Log(Magnitude)} \\ & + \beta_3 \text{Effective Number of Ethnic Groups} \times \text{Log(Magnitude)} \\ & + \beta_4 \text{Effective Number of Presidential Candidates} + \beta_5 \text{Proximity} \\ & + \beta_6 \text{Effective Number of Presidential Candidates} \times \text{Proximity} + \epsilon \end{aligned}$$

The dependent variable in this model is the ratio of independent candidates' votes to the total number of votes in a district. The higher values are suggestive of the higher performance of independent candidates. Similar to the previous models, we are interested in the interactive effect of the effective number of ethnic groups and the logged district magnitude. In order to see if we find any support for our expectations, we need to interpret the marginal effects in Figure 3.6.

Figure 3.6 plots the marginal effect of the effective number of ethnic groups on the ratio of votes received by the independent candidates vis-a-vis the total number of votes in a given district. The effect is always positive and statistically significant at most values of the moderating variable but this positive effect does not mean that the voters who support the Kurdish nationalist parties vote strategically. In order to draw such a conclusion, for the higher values of the district magnitude variable we

should observe more substantial marginal effect estimates. However, the estimates are almost always the same.<sup>2</sup> As such, we can conclude that, in contrast to the strategic entry decisions of the independent candidates affiliated with the Kurdish movement in the 2007 and 2011 elections, the voting behavior of the supporters of Kurdish nationalist parties were not a result of strategic calculations that took into account the relative permissiveness of the districts.

### 3.6 Discussion and Conclusion

In this chapter I examined the interactive effects of ethnic heterogeneity and district magnitude on the number of parties in Turkey. I first demonstrated that the mechanical effect of district magnitude in Turkey confirms our theoretical expectations introduced by previous studies. However, as in the case of the 2002 elections, where the voters' and candidates' expectations do not coincide with reality, the 10% nationwide threshold can make increasing levels of permissiveness at the district level to have no mechanical effect on the translation of votes into seats. This mechanical effect was, however, present for each separate region in our classification, to various extents.

Following the analyses of the mechanical modifying effect of electoral institutions, I proceeded with the strategic modifying effect. While our findings in this section can be interpreted as an outcome of the strategic behavior of the candidates and voters, I argue that in the presence of the 10% nationwide threshold the observed effects of ethnic heterogeneity on party system size were not an outcome of a district-level strategic behavior. Instead they were the result of a nation-level strategic calculation, making the observed positive effect of ethnicity on the party system size some other form of a mechanical effect.

In order to test whether there really existed any strategic behavior on part of the candidates and voters, I used a sub-sample of our dataset. Analyzing the entry decisions and vote shares of the independent candidates associated with the Kurdish parties in the 2007 and 2011 elections, I was able to gauge whether the district-level strategic rationality assumed by Duverger (1959) and others existed in Turkey. The findings suggest that while the entry decisions of the candidates were indeed strategic, the voters supporting these candidates did not have any district-level strategic

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<sup>2</sup>Nevertheless, this constant marginal effect is not necessarily the result of a strategic failure of the Kurdish voters. While we are confident that there is no strategic voting here, we cannot conclude that this is due to a strategic failure.

calculation in their mind. This also suggests that the strategic entry decision modeled by Cox (1997) as being contingent on the strategic voting behavior of the voters does not find support in our case. We can see that entry decisions can be strategic even in the presence of sincere voting, by only considering the permissiveness of districts.

Last but not least, in our analysis on the relationship between the effective number of electoral parties and that of legislative parties and the analysis on the relationship between ethnic heterogeneity and party system size, I investigated regional differences in the country. Since the salient cleavages in Turkey also had a geographical aspect, I was able to show how these different regions consist of different party system dynamics, including the translation of votes into seats and social cleavages into votes for parties. Showing this dimension was also important since it once again underlined how the use of nation-level data in previous research might have disregarded important variations within countries, in other words, cross-district heterogeneity.

## 4. CONCLUSION

The determinants of party system size have been studied from the perspectives of three main approaches. The first of these emphasizes the role of electoral institutions in shaping party competition and voting behavior, thus leading to different party system formations. The second approach underlines sociological factors. The third approach, which combines the first two, points to the interactive effects of electoral institutions and social structure on the number of parties. All three of these approaches have a long history reflecting the unsettled nature of the topic. This thesis contributes to this scholarly debate while aiming to correct several drawbacks in previous research and testing hypotheses using cross-national and Turkey-specific data.

In Chapter 2, I started with a discussion on the drawbacks and contributions of previous studies. In the first part of the chapter, I demonstrated how the incorporation of a single characteristic of social heterogeneity, namely crosscuttingness, can potentially change our findings. At this first step, with the theoretical expectation that high levels of crosscuttingness between different cleavage dimensions should offset differences among social groups and low levels of crosscuttingness should reinforce those, I split the sample according to the ethnoreligious crosscuttingness scores. In this way, I could examine the three-way interaction between ethnic heterogeneity, district magnitude, and ethnoreligious crosscuttingness in affecting the number of parties. In these analyses of preliminary nature, I used Clark and Golder's (2006) and Selway (2011) country-level datasets. Among several caveats, I noted that the findings are only suggestive while pointing out the problems caused due to the aggregation level of the data and the somewhat arbitrary selection process of ethnoreligious crosscuttingness.

In the main analyses of Chapter 2, on the other hand, I employed a novel district-level dataset in addition to taking into account six different cleavage dimensions in measuring social heterogeneity. One of the main theoretical arguments that motivated this design is that ethnic heterogeneity or any other cleavage dimension does

not reflect the overall heterogeneity in a society. Since the main purpose of this study is to examine how overall social fragmentation is reflected in the party system, instead of prioritizing one social cleavage dimension over others, it is best to incorporate all potential cleavages as well as the extent to which they overlap and reinforcement each other. In this regard, I employed Potter's (2016) constituency-level dataset that includes social heterogeneity scores based on a novel approach that combines six different demographic traits in the calculation of an underlying measure of heterogeneity.

By employing a district-level dataset that is not laden with the assumptions regarding which cleavages are salient, I tested Duverger's (1959) conditional hypothesis that a party system is indifferent to social heterogeneity when it is non-permissive but social heterogeneity increases the number of parties when district magnitude is sufficiently high. The findings suggest that the number of parties is unaffected by social heterogeneity only when the district magnitude is 1 and the positive effect of social heterogeneity on party system size gets substantially more significant at higher district magnitudes. In other words, we found strong support for the conditional hypothesis.

Another point put forward in Chapter 2 is that the relationship between social heterogeneity and party system size may not be linear. To account for a curvilinear relationship between social heterogeneity and the number of parties, in addition to the baseline model, I followed two alternative modeling strategies. In the first one, I replaced the social heterogeneity score with its natural logarithmic transformation. By doing so, I could control for the diminishing positive effects of higher levels of heterogeneity when social heterogeneity is high. In the second alternative modeling strategy, I included both the social heterogeneity variable and its squared term in the model specification. The expectation was to get negative coefficient estimates for the squared term if high levels of social heterogeneity and the number of parties had a negative relationship. The findings of all three models confirm our expectations. However, compared to the first two models the model with the squared term shows more conservative marginal effect estimates.

In Chapter 3, I examined the interactive effects of ethnic heterogeneity and district magnitude on the effective number of parties in the Turkish context. In this chapter, I used a novel dataset that comprises the district-level outcomes of six general elections from 2002 to 2018. As numerous studies (e.g., Duverger 1959; Cox 1997; Clark and Golder 2006) put it, the effect of electoral institutions on party system size takes place in a two-stage process. First, there should be a mechanical effect that translates votes into seats so that voters and candidates can behave strate-

gically according to their expectations from this mechanical process. As such, for there to be an effect of increasing permissiveness on party system size, we should first observe a positive relationship between effective number of electoral parties and that of legislative parties. Therefore, in this chapter, I first examine the nature of this mechanical modifying effect in Turkey. When the full sample is analyzed without taking into account the underlying distribution of the data, we reach to findings that are contrary to our theoretical expectations informed by previous research on the topic. More precisely, higher district magnitudes do not lead to a more proportional translation of votes into seats in Turkey. However, when we analyzed the data with more attention, we see that the theoretically unexpected findings were due to the high contrast between the the 2002 and other examined elections. Thus, when we analyze each election separately or excluded the 2002 elections, we see that the mechanical effect was in line with the literature and our theoretical expectations.

After demonstrating that the vote-to-seat translation in Turkey indeed confirms our theoretical expectations, I examine the second stage of the electoral process. At this stage, voters cast their vote with the expectation that their votes would be wasted if they do not vote for a party that has a reasonable chance of winning seats in their district. In turn, candidates decide to enter, assuming voters' would behave as strategically. This reasoning should lead to a concentration of votes in smaller districts and a dispersion in larger ones. Therefore, it is expected that, in districts with larger magnitude, the marginal effect of ethnic heterogeneity on the effective number of electoral parties would be higher. In Turkey, we do observe that in larger districts with higher magnitudes the marginal effect of ethnic heterogeneity is higher. However, I argue that this observed effect is not due to the district-level strategic calculations of the parties or voters. The 10% nationwide electoral threshold requires parties and voters to adopt a nation-level strategic perspective, which makes the observed increase in the marginal effects almost a mechanical of greater ethnic heterogeneity on party system size.

Nevertheless, the Turkish context still provided us with a great opportunity to assess whether the district-level instrumental rationality assumed by Duverger (1959) and others existed. To test the strategic modifying effect explained above, I analyzed the entry decisions of the independent candidates affiliated with the Kurdish nationalist parties during the 2007 and 2011 elections. Applying a similar model to that of Clark and Golder's (2006) I concluded that for those candidates, the decision to participate in those elections was indeed strategic and this strategy depended on both ethnic heterogeneity and the permissiveness of a district. Moreover, I also show that there is no sign of a similar strategic approach in the behavior of the voters supporting the Kurdish nationalist parties.

While the study is the first of its kind in terms of testing the theoretical expectations of previous research on the interactive hypothesis in the Turkish context, it also provides a historical account that shows how the often referred cleavage dimensions in Turkey have a geographical aspect. Based on previous studies in political science (e.g., Çarkoğlu and Avcı 2002; Şekercioğlu and Arikan 2008) and comparative historical sociology (? ?), I argued that the Turkish electoral geography consists of three regions. The first region is the coastal region starting from the western end of the Black Sea to Eastern Mediterranean. The second region is the predominantly Kurdish region which corresponds mostly to the Eastern and Southeastern regions of Turkey, and the third region is between those other two. In line with these geographical patterns, the interactive effects of ethnic heterogeneity and district magnitude on party system size vary as well.

I believe this thesis has two main contributions to literature. First, it demonstrates that Duverger's 1959 conditional proposition on the relationship between social heterogeneity, district magnitude, and party system size holds even when appropriate models and data are used. In this regard, other than Potter (2014) who adds a cross-district diversity element into the relationship, this is the first study that examines the proposition at an appropriate aggregation level of data. The second main contribution of this thesis is that Duverger's law has been tested for the first time in the district-level in the Turkish context.

While this thesis makes considerable contributions to the literature, both empirical chapters have their own limitations. In the cross-national analyses in Chapter 2, despite several measures taken to avert potential biases, the nature of the data collection process does not preclude a potential bias in the representativeness of the data. However, the direction of this bias is unclear. Furthermore, the data come from 13 European democracies. Therefore, it is plausible to question the external validity of our findings. Lastly, a priori agnostic approach we took to measure social heterogeneity might not always provide the most accurate reflection of the politically salient distinctions in a society. In the second empirical chapter focusing on Turkey, we could only examine one social cleavage's relationship with party system size, namely, ethnicity. Incorporating the center-periphery cleavage into the empirical analyses could significantly improve our understanding of the interactive effects of social structure and electoral institutions' permissiveness on the district-level party system size in Turkey.

In light of the contributions and limitations of the two empirical chapters in this thesis, there are several venues of further research which I think is worthy of mentioning here. In the cross-national chapter, as I used diversity scores from Potter

(2018) derived from three waves of the CSES which rely on probability samples at the nation level, further research might improve this study by incorporating survey data that are representative at the district level. Moreover, even though I argue that prioritizing one cleavage (i.e., ethnic heterogeneity) over others is likely to cause an omitted variable bias, as I mentioned above, implementing an a priori agnostic approach has its drawbacks as well. Therefore, in order to prevent these problems, researchers can get expert opinion on which cleavages are electorally salient or politically relevant in individual countries they are studying. Finally, this study came short of finding conclusive evidence on whether the relationship between social heterogeneity and party system size is linear. To answer this question, one can look for a more appropriate setting in parts of the world other than Europe where ethnic, linguistic, and religious diversity has greater variation. This would also help improve the external validity of this research.

As for the study of the determinants of party system size in Turkey, this thesis assumes an exploratory role. By engaging in different aspects of Duverger's conditional hypothesis and its reflections on Turkey, this thesis shows that there is plenty of room for further research on the topic. First, one can analyze municipal elections in Turkey. Since each municipality elects a single mayor, researchers can test whether Duverger's law in single member districts or Cox's (1997) theorization formulated as the M+1 rule can find support in the Turkish case. Alternatively, one can attempt to causally identify the effect of higher proportionality of votes and seats on the translation of social structure on party system size as there are arbitrary cut-offs in municipal council sizes in Turkey, which can be exploited to employ a regression discontinuity design. Moreover, while this study is limited to the general elections between 2002 and 2018, Turkey's multiparty elections go back to 1950s. Future studies can extend our analyses to the previous elections. This will not only allow us to understand the continuity and change in the Turkish party system, but will help assess whether certain institutional changes like the introduction of the 10% nationwide threshold in 1983 or the transition from a plurality to a proportional representation rule following the 1960 Coup have changed how the social structure represents itself in the Turkish party system.

One other thing to note is that our two chapters do not engage with issues regarding the endogenous relationship between the party system, social heterogeneity, and electoral system. It is quite likely that electoral institutions are designed in the first place to allow or prevent certain social groups from accessing to political power. These can be both due to the strategic decisions of the elites or unintended developmental consequences of existing party system characteristics. Thus, further research, while attempting to causally identify the effects of social heterogeneity and electoral

institutions, can use the empirical evidence in this thesis as a starting point. Further studies can also focus on the differential effects of electoral institutions and ethnic heterogeneity on party system in different regions of Turkey. While the long-rooted histories in these variations make this task harder, several institutional changes in the last 200 years of the Turkish modernization process can provide researchers with valuable settings to exploit those as natural experiments.

Finally, the findings of this thesis have several policy implications as well. First of all, we see that the 10-dwarf smaller parties, works as a force towards party system nationalization. Furthermore, we do see that in the absence of such a nationwide institution, parties sometimes behave in line with the assumed district-level rationality in previous research. However, we do not observe similar behavior on part of voters. As such, in order to minimize the ‘wasted’ votes due to coordination problems on part of the voters, parties can communicate their strategies and the intricacies of the processes that lead to the translation of votes into seats to their supporters. This becomes even more important with the introduction of the so-called alliance law which allows alliance member parties to acquire seats even if they do not surpass the 10% threshold. Despite this institutional novelty, we did not witness parties that had not expected to surpass the threshold but were confident that the alliance they were part of would get a vote share higher than 10 (such as İYİP, MHP) to use their resources only at districts where they have a chance to win seats. As new parties like Demokrasi ve Atılım (DEVA), Gelecek, and Zafer are not expected to receive more votes than what the 10% threshold dictates, joining an electoral alliance can help them focus their efforts on districts that they consider strongholds. However, parties in the same alliance should also coordinate, especially in districts where one member’s supporters’ second best option is a party from the other alliance.

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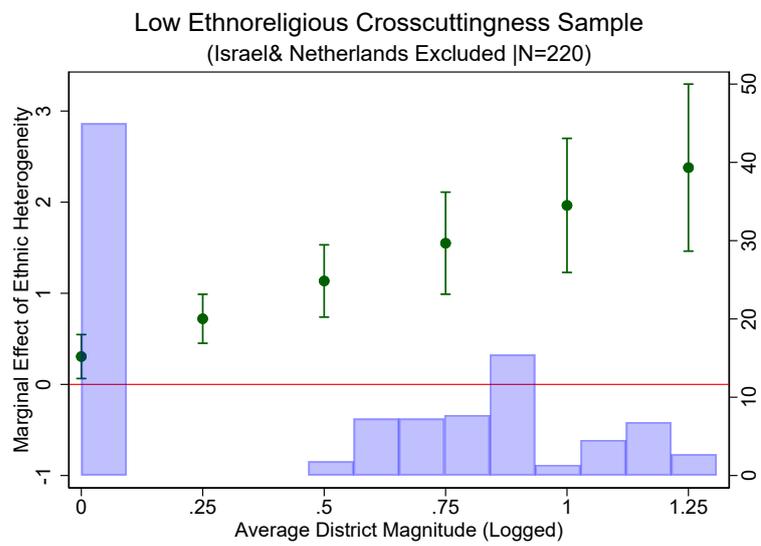
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## APPENDIX A

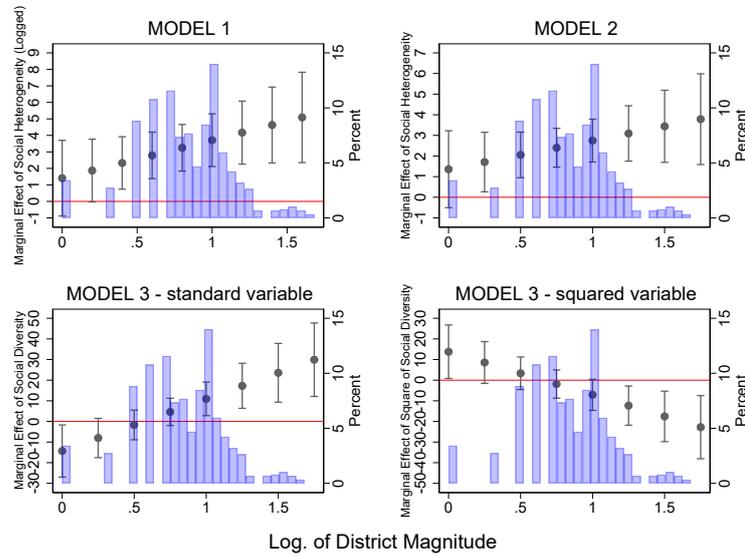
### Low Ethnoreligious Crosscuttingness Sample (Israel and the Netherlands Excluded)

Figure A.1 Marginal Effects for Low Ethnoreligious Corsscuttingness Sample (Israel and the Netherlands Excluded)



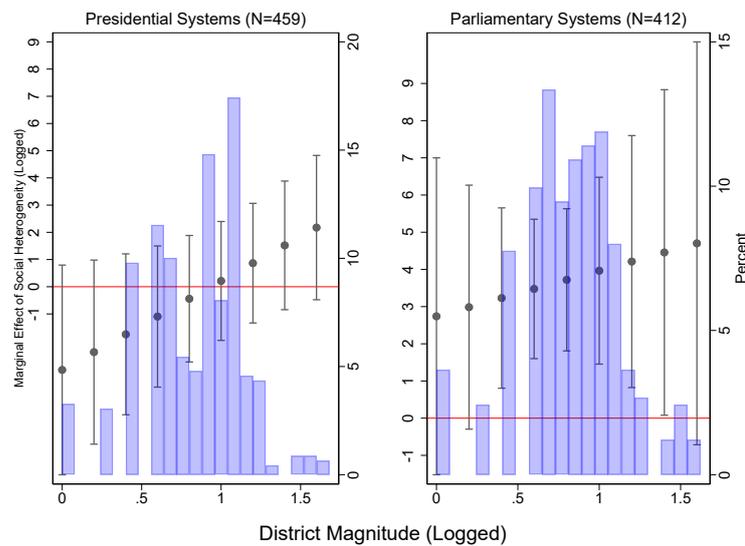
## Marginal Effects Plotted for All 3 Models in the Main Analysis

Figure A.2 Marginal Effects of Social Diversity on Party System Size | District Magnitude



## Marginal Effect of Social Diversity on Party System Size (Presidential vs. Parliamentary)

Figure A.3 Marginal Effect of Social Diversity on Party System Size (Presidential vs. Parliamentary Systems)



## Binning Plots of the Marginal Effects for Main Analyses

Figure A.4 Binning Plot of Marginal Effects (Model 1)

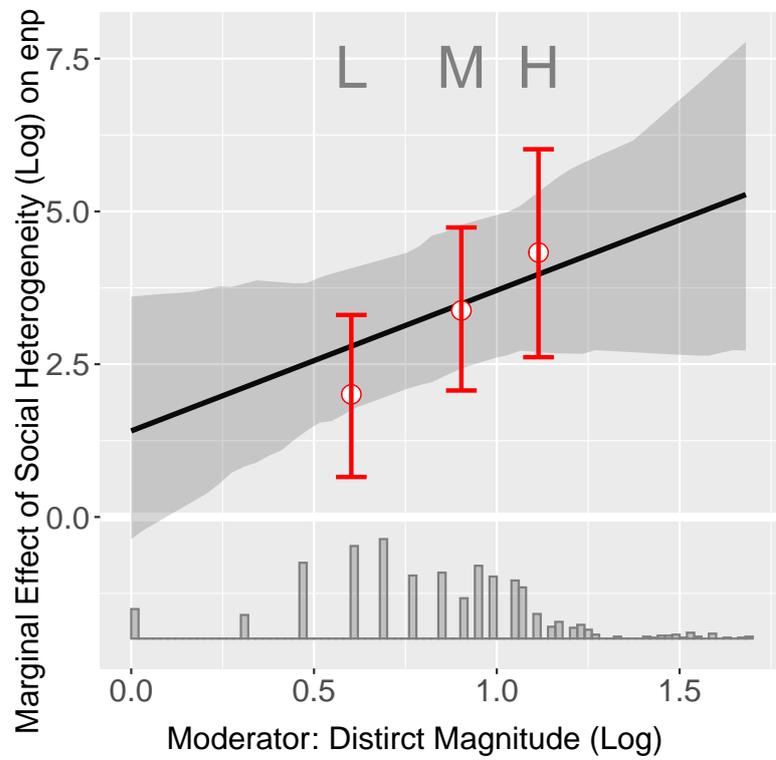


Figure A.5 Binning Plot of Marginal Effects (Model 2)

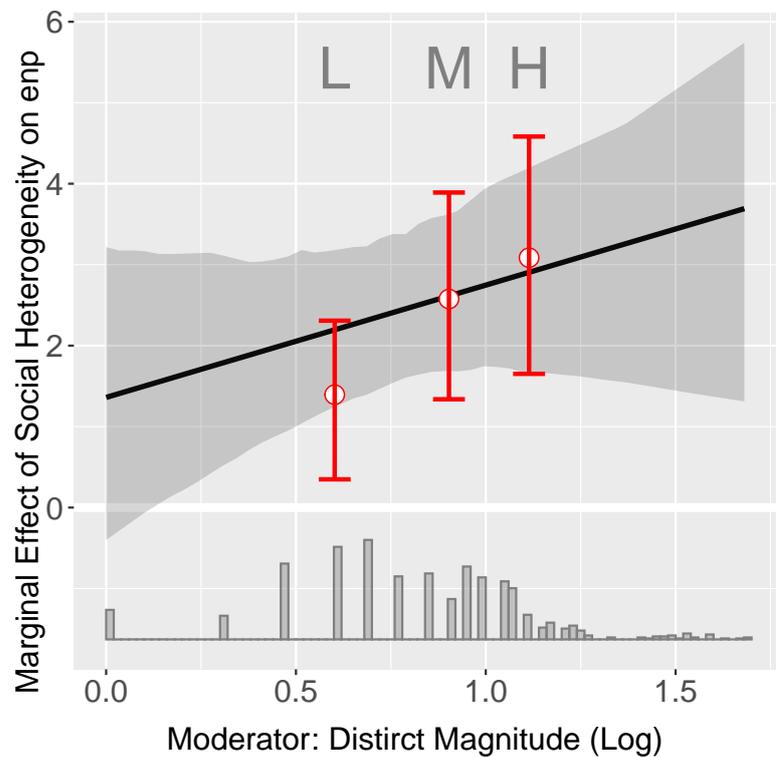


Figure A.6 Binning Plot of Marginal Effects - Social Heterogeneity (Model 3)

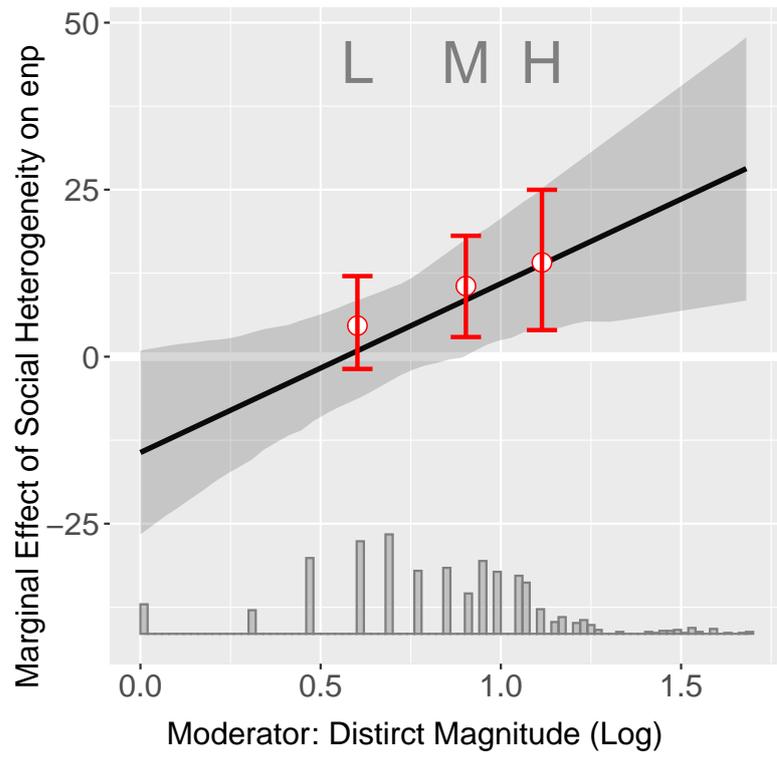


Figure A.7 Binning Plot of Marginal Effects - Square of Social Heterogeneity (Model 3)

