

**THE ROLE OF BUREAUCRATIC PURGES IN SHAPING PUBLIC
SERVICE PROVISION**

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**THE ROLE OF BUREAUCRATIC PURGES IN SHAPING PUBLIC
SERVICE PROVISION**

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ABSTRACT

THE ROLE OF BUREAUCRATIC PURGES IN SHAPING PUBLIC SERVICE PROVISION

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This thesis examines the impact of bureaucratic purges on public service provision, focusing on the Turkish government's dismissal of nearly 130,000 public employees between 2016 and 2018 following a failed coup attempt. Leveraging novel administrative data on each dismissed state employee, it begins with an analysis of the spatial and administrative distribution of the dismissals. The research mainly aims to move beyond canonical approaches that view purges primarily as a means of consolidating power using instances of elite purges. Instead, it captures the broader societal impacts by assessing changes in the state's capacity to deliver services after a mass purge. Using a difference-in-differences model to analyze the varying magnitudes of dismissals affecting public teachers on students' performance in standardized tests, the findings reveal a decrease in student performance at the district level. However, the same model does not provide evidence that the dismissal of police officers impacts crime rates. Mainly, the research aims to utilize the purge context to go beyond the limited samples and inherent methodological problems that previous studies encountered when analyzing the impact of bureaucratic capacity on public service provision and achieve a higher external validity.

ÖZET

BÜROKRATİK TASFİYELERİN KAMU HİZMETİ SUNUMUNA ETKİSİ

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SİYASET BİLİMİ YÜKSEK LİSANS TEZİ, TEMMUZ 2024

Tez Danışmanı: Dr. Öğr. Üyesi Fatih Serkant Adıgüzel

Anahtar Kelimeler: bürokrasi, devlet kapasitesi, kamu hizmeti, tasfiye, Türkiye

Bu tez, bürokratik tasfiyelerin kamu hizmeti sunumu üzerindeki etkisini incelemekte ve başarısız bir darbe girişiminin ardından 2016 ile 2018 yılları arasında Türk hükümetinin yaklaşık 130,000 kamu çalışanını ihraç etmesine odaklanmaktadır. İhraç edilen devlet çalışanlarına ilişkin yazarın oluşturduğu idari verileri kullanarak, tasfiyelerin mekansal ve idari dağılımının analizini yapmakla başlayan araştırma, esas olarak tasfiyeleri siyasi elit tasfiyelerini kullanarak güç konsolidasyonunun bir aracı olarak gören geleneksel yaklaşımların ötesine geçmeyi hedeflemektedir. Bunun yerine, kitlesel bir tasfiyenin ardından devletin kamu hizmeti sunma kapasitesindeki değişiklikleri değerlendirerek daha geniş toplumsal etkilere odaklanmaktadır. Farkların farkları (*difference-in-differences*) modelini kullanarak kamu öğretmeni ihraçlarının ilçe seviyesindeki farklılaşan oranlarını kullanarak, ihraçların öğrencilerin liselere geçiş sınavlarındaki performansında bir düşüşe neden olduğunu ortaya koymaktadır. Ancak, aynı model, polis memurlarının görevden alınmasının suç oranlarını etkilediğine dair bir bulgu sunmamaktadır. Esasen, bu çalışma önceki araştırmaların bürokratik kapasitenin kamu hizmeti sunumu üzerindeki etkisini analiz ederken karşılaştıkları sınırlı örneklem ve metodolojik sorunları aşmak için tasfiyelerin sunduğu araştırma olanakları kullanmak ve daha yüksek bir dışsal geçerliliğe erişmektir.

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When I first entered my classes at Boğaziçi University, I thought I would hate political science. Then, I met Prof. Mine Eder, who became a role model for me, both for introducing me to political economy and for standing with her students at all costs. Without the little scholarly hub I created with my dear friends and professors in my final years, I would not have pursued a life in political science for even one more hour.

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was unsure of my academic direction. He wholeheartedly agreed to be my advisor and guided me over two years from the most abstract research topics to create this thesis. Every class with him introduced me to profoundly insightful concepts and methods, which was an absolute privilege for a Master’s student. His ingenious guidance shaped every step of my research, even during times when I felt most lost. The past two years would have been significantly more challenging without a professor to guide me at every step of my research and academic career. Thank you, Serkant *Hocam*, for addressing even my simplest problems and lending a hand in shaping my future academic career.

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To my dearest family and friends

TABLE OF CONTENTS

ABSTRACT	iv
ÖZET	v
LIST OF TABLES	xi
LIST OF FIGURES	xii
TRANSLATIONS	xv
1. INTRODUCTION	1
2. TURKEY’S PURGES OF 2016-2018	6
2.1. Introduction	6
2.2. AKP’s Relationship with Gulenists	7
2.3. Purging the Bureaucrats	10
2.4. Collecting the Administrative Data on Purges	13
2.5. Dismissals	15
2.5.1. Spatial Distribution of the Dismissals	20
3. MINISTRY OF EDUCATION	25
3.1. Introduction	25
3.2. Teachers’ Impact on Student Performance	26
3.3. Dismissals in the Ministry of National Education	28
3.3.1. Teachers’ Perspective: What Did Unions Say?	35
3.4. Data and Research Design	38
3.4.1. Data	38
3.4.2. Model	40
3.5. Results	41
4. MINISTRY OF INTERIOR	46

4.1. Introduction	46
4.2. Police Officers' Impact on Crime Rates.....	47
4.3. Dismissals in the Ministry of Interior	48
4.4. Data and Research Design	51
4.4.1. Data.....	51
4.4.2. Model	53
4.5. Results	54
5. CONCLUSION	56
BIBLIOGRAPHY.....	61
APPENDIX A.....	77
APPENDIX B.....	85

LIST OF TABLES

Table 2.1. Number of Dismissals per KHK	16
Table 3.1. Number of Dismissals on Ministry of Education per KHK	29
Table 3.2. Effect of Dismissals on Exam Score (Top Ranking School)	42
Table 4.1. Number of Dismissals in the Ministry of Interior per KHK	49
Table 4.2. Number of Dismissals Affecting Security Officers per KHK	50
Table 4.3. Clusters and Crimes	52
Table 4.4. Effect of Dismissals on Crime Rates	54
Table A.1. All KHKs Published During the Emergency Rule	78
Table A.2. The Number of Dismissals by Institutions	79
Table A.3. Quarterly Public Employee Data Shared by the Presidency of Strategy and Budget	80
Table A.4. The Impact of Being in Different Regions on Dismissal Rates, the Base is Southeast Anatolia Region	82
Table A.5. The Impact of Being in Different Regions on Dismissal Rates, the base is Tekirdağ Subregion	83
Table A.6. The Impact of Being in Eastern Anatolian Region and pro- Kurdish Peoples' Democratic Party Vote Share on Dismissal Rate	84
Table B.1. Summary of Teacher Employment and School Facilities in Turk- ish Ministry of Education (2015-2019)	85
Table B.2. Balance Table for Analysis on Ministry of Education using Bi- nary Treatment Variable	85
Table B.3. Effect of Dismissals on Exam Score (Median Ranking Schools) .	85
Table B.4. Effect of Dismissals on Exam Score (Lowest Ranking Schools) .	86

LIST OF FIGURES

Figure 2.1. Heatmap of the Dismissals by Date and Ministry	16
Figure 2.2. Dismissal Numbers by KHKs	17
Figure 2.3. Public Employee Numbers	18
Figure 2.4. Dismissal Numbers by Ministries	19
Figure 2.5. Standardized Count of Dismissed Personnel (Total, Province- Level)	21
Figure 2.6. Standardized Count of Dismissed Personnel (Total, District- Level)	22
Figure 2.7. Standardized Count of Dismissed Personnel in Different Min- istries	24
Figure 3.1. Chronology of the Dismissals (2016-2018)	30
Figure 3.2. Standardized Count of Dismissed Teachers (Province Level- KHK672)	31
Figure 3.3. Standardized Count of Dismissed Teachers (Province Level- Total)	31
Figure 3.4. Standardized Count of Dismissed Teachers (District Level- KHK672)	33
Figure 3.5. Standardized Count of Dismissed Teachers (District Level-Total)	33
Figure 3.6. Change in the Dismissal Rates in Tunceli Province	34
Figure 3.7. The Impact of Dismissals on Exam Scores, Based on Predic- tions in Model 4	43
Figure 4.1. Standardized Count of Dismissed Police Officers (KHK670) ...	51
Figure 4.2. Avarage Crime Rates per Different Clusters for Treatment and Control Groups	52
Figure A.1. A Screenshot from Original Document of the KHK No. 672...	77
Figure A.2. A Screenshot from Original Document of the KHK No. 679...	77

Figure A.3. Heatmap of the Dismissals by Date and Ministry (Considering the 99 Percentile of the Values)..... 80

Figure A.4. Heatmap of the Dismissals by Date and Ministry (Logged).... 81

TRANSLATIONS

- Coast Guard Command: *Sahil Güvenlik Komutanlığı*
Confederation of Public Servants Trade Union: *Memur Sendikaları Konfederasyonu*
Council of State: *Danıştay*
Court of Accounts: *Sayıştay*
Court of Cassation: *Yargıtay*
Directorate of Religious Affairs: *Diyanet İşleri Başkanlığı*
Disaster and Emergency Management Presidency: *Afet ve Acil Durum Yönetimi Başkanlığı*
Education and Science Workers' Union: *Eğitim ve Bilim Emekçileri Sendikası*
Educators' Union: *Eğitimciler Birliği Sendikası*
General Directorate of Security: *Emniyet Genel Müdürlüğü*
Gendarmerie General Command: *Jandarma Genel Komutanlığı*
General Staff of Turkish Armed Forces: *Genelkurmay Başkanlığı*
Higher Education Institutions: *Yükseköğretim Kurumları*
Justice and Development Party: *Adalet ve Kalkınma Partisi*
Labour Union of the Labourers of Education and Science: *Eğitim ve Bilim İşgörenleri Sendikası*
Ministry of Customs and Trade: *Gümrük ve Ticaret Bakanlığı*
Ministry of Development: *Kalkınma Bakanlığı*
Ministry of Economy: *Ekonomi Bakanlığı*
Ministry of Energy and Natural Resources: *Enerji ve Tabii Kaynaklar Bakanlığı*
Ministry of Environment and Urbanization: *Çevre ve Şehircilik Bakanlığı*
Ministry of European Union Affairs: *Avrupa Birliği Bakanlığı*
Ministry of Family and Social Policies: *Aile ve Sosyal Politikalar Bakanlığı*
Ministry of Finance: *Maliye Bakanlığı*
Ministry of Food, Agriculture and Livestock: *Gıda, Tarım ve Hayvancılık Bakanlığı*
Ministry of Foreign Affairs: *Dış İşleri Bakanlığı*
Ministry of Health: *Sağlık Bakanlığı*
Ministry of Interior: *İç İşleri Bakanlığı*
Ministry of Justice: *Adalet Bakanlığı*
Ministry of Labour and Social Security: *Çalışma ve Sosyal Güvenlik Bakanlığı*

Ministry of National Defense: *Milli Savunma Bakanlıđı*
Ministry of National Education: *Milli Eđitim Bakanlıđı*
Ministry of Science, Industry and Technology: *Bilim, Sanayi ve Teknoloji Bakanlıđı*
Ministry of Transport, Maritime Affairs and Communication: *Ulařtırma, Denizcilik ve Haberleřme Bakanlıđı*
Ministry of Youth and Sports: *Gençlik ve Spor Bakanlıđı*
Ministry of Culture and Tourism: *Kültür ve Turizm Bakanlıđı*
Ministry of Forestry and Water Affairs: *Orman ve Su İşleri Bakanlıđı*
National Security Council Secretariat: *Milli Güvenlik Konseyi Sekreterliđi*
Peoples' Equality Party: *Halkların Demokratik Partisi*
Prime Ministry: *Başbakanlık*
Student Selection and Placement Center: *Öđrenci Seçme ve Yerleřtirme Merkezi*
Supreme Election Board: *Yüksek Seçim Kurulu*
Treasury Undersecretariat: *Hazine Müsteřarlıđı*
Turkish Armed Forces: *Türk Silahlı Kuvvetleri*
Turkish Grand National Assembly: *Türkiye Büyük Millet Meclisi*
Turkish Radio and Television Corporation: *Türkiye Radyo Televizyon Kurumu*
Turkish Statistical Institute: *Türkiye İstatistik Kurumu*
Turkish Union of Public Employees in the Education, Training, and Science Services: *Türkiye Eđitim, Öğretim ve Bilim Hizmetleri Kolu Kamu Çalışanları Sendikası*

1. INTRODUCTION

Would a government’s purge of street-level public employees disrupt public service provision or enhance it? Although one might expect a direct relationship between a significant decrease in state personnel numbers and the disruption of services, there is insufficient empirical evidence to determine the direction of the purge’s impact, particularly in a regime with partisan appointments. The essential role of the bureaucratic cadres and state institutions for the state capacity and delivery of public service has been a long-studied subject (Acemoglu, García-Jimeno, and Robinson 2015; Mann 1984; Skocpol 1985; Williams 2021). An established line of literature accepts a direct relationship between bureaucrats and the state’s ability to deliver proper services (Huber and Ting 2021; Knack and Keefer 1995; Lewis 2007; Rauch and Evans 2000). For instance, a sudden decrease in the number of personnel essential for conducting street-level government jobs could negatively impact the delivery of public services such as education, crime prevention, and even grain supply (Acemoglu et al. 2020; Breton and Wintrobe 1986; He and Wu 2023; Li and Manion 2023).

How about when the government decides to dismiss public employees appointed through patronage ties? On the one hand, past political appointments might have enhanced the state’s capacity to deliver services through networks between employees and politicians, easing everyday operations (Brierley 2021; Toral 2024). Purges targeting these employees would also disrupt these previously established channels (Jiang 2018). Furthermore, despite their political ties, these bureaucrats often manage daily operations in state offices and have a vested interest in the government’s survival for the sake of their own security (Brierley et al. 2023). On the other hand, purging corrupt bureaucrats from state cadres might enhance the state’s capacity to deliver public services (Barbosa and Ferreira 2019; Lewis 2007), as many governments that have enacted purges have argued. Moreover, decreasing political patronage among civil servants can also elevate the public service provision on the assumption that a merit-based system was implemented afterward (Akhtari,

Moreira, and Trucco 2022; Charron et al. 2017; Huber and Ting 2021).

Hence, having available data about some of the characteristics of purged bureaucrats can lead us to understand both the targets of the purge and its consequences. Built upon the previous literature, I argue that an authoritarian government that launched a purge against its former allies would disrupt public service provision. This conceptualization indeed speaks with the bureaucratic turnover's impact on the public service provision after elections as growing numbers of dismissed or resigning bureaucrats, even though they were recruited through political appointments, would disrupt the public service provision (Akhtari, Moreira, and Trucco 2022; Toral 2019, 2024). The impact would be higher when the turnover could not be balanced with new employees and if vacuums engender among the state departments.

The Turkish government's dismissal of nearly 130,000 civil servants and security personnel after the 2016 coup attempt by its former ally Gulenists is a rich case for exploring these issues. While political dissidents of the ruling Justice and Development Party (AKP) and its leader Recep Tayyip Erdoğan were also targeted with these purges, a significant amount of public employees were dismissed because they were affiliated with the Gulenist movement, the biggest Islamist political movement in the country until it was outlawed and deemed a terrorist organization just before the coup attempt. This thesis examines the magnitude of these widespread purges across various state departments and their variations among different administrative regions using the novel dataset created using the detailed announcements of every single dismissed civil servant in the country's official gazette. A significant portion of the research is dedicated to understanding the novel administrative data collected by the author and the geographical distribution of dismissals, as there is scarce scholarly attention to this event apart from Bozcaga and Christia (2020), despite it being one of the biggest bureaucratic purges of the 21st century. The remaining part returns to the main research question, attempting to understand the impact of the purges on public service provision by exploiting the dismissals in Turkey's Ministry of Education (*Milli Eğitim Bakanlığı*)¹ and Ministry of Interior (*İç İşleri Bakanlığı*). As an exogenous shock, the purges of 2016-2018 allow us to have higher external validity to estimate the social impacts of bureaucratic turnover, which is not the case in most of the previous studies on education outcomes and security provision (Bracht and Glass 1968; Di Tella and Schargrodsky 2004; Findley, Kikuta, and Denly 2021).

To explore the impact of purges on public service provision, I developed two

¹Translations of institution names used throughout the research from Turkish to English can be found in the Translations section at the beginning of the thesis.

difference-in-differences models using geographical variations in the dismissal of teachers and police officers. The first model assesses how dismissed teachers affect student performance on standardized high school entrance exams at the district level. The second model examines the impact of police dismissals on crime rates using official statistics across various crime types at the provincial level. My findings indicate that teacher dismissals negatively affected student exam performance, leading to a decline in exam scores by 4.64 to 7.37 percent across different model specifications, considering various time periods. In contrast, while dismissals of police officers did not significantly affect overall crime rates or several crime categories, they did reduce crimes related to property and bodily integrity. Specifically, a one standard deviation increase in police dismissals corresponded to a 12.1 percent decrease in property crimes. In brief, I found that purges negatively impacted educational outcomes, whereas their effect on crime rates was only evident in an unexpected decrease in property crimes.

While there are a plethora of studies on the purges of elite bureaucrats, particularly in authoritarian regimes, research on street-level ranks is quite scarce, often due to the unavailability of data. Even though bureaucratic purges have been particularly drawn attention for their importance to power consolidation in authoritarian regimes (Acemoglu, Egorov, and Sonin 2008; Bueno de Mesquita and Smith 2016), they often focused on higher levels of bureaucrats in the Soviet Union or China (Montagnes and Wolton 2019). However, we frequently see that governments use patronage ties to specifically appoint their allies to low-level bureaucratic offices (Brierley 2021). Moreover, a recent body of literature asserts that losing patronage bureaucrats can lead to disruptions in public service provision (Brierley et al. 2023). Particularly in times of rapid change such as a dramatic bureaucratic turnover after a party with strong patronage ties loses an election, scholars observed a decline in essential services provided by the state (Akhtari, Moreira, and Trucco 2022; Toral 2019, 2024, Forthcoming).

Understanding the impact of mass purges in a democratically backsliding regime such as Turkey beyond the consolidation of power is crucial for two reasons: (1) Losing a significant portion of partisan appointments can disrupt public service provision, especially in sectors such as education, where replacement requires substantial mobilization and time. (2) However, if a state department has competing factions that can be used to replace those who have been purged, public service provision may not be disrupted. For example, in Turkey's police department, the government began acting against Gulenists even before the coup attempt, as this faction had launched various attacks against its former ally AKP. Therefore, while the impact of purges in the education sector might be more pronounced, it could be

less severe in a state branch with different internal dynamics.

With data on nearly 84,000 dismissed public employees including information about their provincial-level posts, and about 54,000 with district-level positions, I also explored whether there was any regional clustering among individual dismissals as well as within state departments. I found that the initial wave of purges intensified in the Central Anatolian region, whereas the Eastern Anatolian region experienced them on a smaller scale. However, when considering the total number of dismissals, particular administrative regions in Eastern Anatolia began to be affected by the dismissals to a greater extent as well. I argue that while the government used the emergency decrees to target its former allies initially, it later broadened the scope to include other political dissidents that might clustered in certain geographies, which can be perceived as an instrument of collective punishment during a bureaucratic purge (Li and Manion 2023).

These findings also align with reports from non-governmental organizations, labor unions, and political parties, which deemed emergency decrees as a tool for targeting not only coup plotters but also political dissidents (Altıok 2018; Eğitim-Sen 2018; Öndül 2022). For instance, the initial wave of dismissals in the Ministry of Education did not particularly impact eastern Tunceli province, a region populated by the country's marginalized Kurdish Alevi community who are less likely to be affiliated with a Sunni cult embracing Turkish nationalism. Nevertheless, when considering the total number of dismissals, Tunceli's three districts became the most affected districts in the country when dismissals were standardized by population. Hence, we can infer that there is a difference between the initial waves of purges and their latest stages regarding the change in their targets, at least in particular regions or institutions.

Furthermore, different state institutions exhibited significant regional variations. Contrary to the Ministry of Education, the initial purges affecting the General Directorate of Security were particularly clustered in the Eastern Anatolian region. More importantly, the varying magnitude of purges among neighboring provinces and districts within the same institution demonstrates that the purges were not completely random. While a particular district in one province had a high number of dismissals, its closest neighbor might have had nearly zero dismissals, which could be instrumental in understanding the cult's previous networks.

In the end, this thesis aims to understand the dynamics of public service provision when a government purges street-level bureaucrats previously appointed through patronage ties. My research contributes to the literature on state capacity by focusing on the impact of bureaucratic cadres on service provision. Additionally, it

engages with the literature on authoritarian states, particularly examining their responses when challenged by their allies. It also uniquely contributes to the emerging literature on how purges affect state capacity and service provision, particularly addressing the theoretical arguments that suffer from a lack of empirical studies corroborating them. Finally, it builds on research areas on education outcomes and crime in my case studies on ministries.

The rest of this thesis is structured as follows: The first chapter focuses on the novel dataset collected on Turkey's 2016-2018 bureaucratic purges. After reviewing the existing literature on Gulenists, bureaucratic capacity, and purges, I will explain the institutional and geographic distribution of dismissals and explore possible underlying reasons. The third chapter will examine the impact of a reduced number of patronage civil servants on public service provision. Starting with a review of the literature on the effect of teachers on student performance, I use purges in the Ministry of National Education as a case study. The subsequent chapter concentrates on the Ministry of Interior to understand the purge's impact on security officers, incorporating previous literature on reductions in police officers and their effect on crime rates. The final chapter summarizes the theoretical background, empirical results, and limitations of the thesis, and concludes with suggestions for further research.

2. TURKEY’S PURGES OF 2016-2018

2.1 Introduction

According to Article 120 of the Turkish Constitution before the 2017 amendments, the constitution was in force during the period of interest:

In the event of the emergence of serious indications of widespread acts of violence aimed at the destruction of the free democratic order established by the Constitution, or of fundamental rights and freedoms, or serious deterioration of public order because of acts of violence, the cabinet, meeting under the chair of the President of the Republic, after consultation with the National Security Council, may declare a state of emergency in one or more regions or throughout the country, for a period not exceeding six months.²

Additionally, Article 121 of the Turkish Constitution gave the cabinet the power to issue “decrees having the force of law (*Kanun Hükmünde Kararname (KHK)* in Turkish³)” on matters necessitated by the state of emergency:

During the state of emergency, the cabinet, under the chair of the President of the Republic, may issue decrees having force of law on matters necessitated by the state of emergency. These decrees shall be published in the Official Gazette and submitted to the Turkish Grand National Assembly on the same day for approval; the time limit and procedure for their approval by the Assembly shall be indicated in the Rules of Procedure.

²All translations from Turkish to English in this thesis were made by the author after cross-checking them with previous translations if they exist.

All legal instruments regarding the state of emergency in Turkey with the laws in force at the period can be accessed via Istanbul Bilgi University Human Right Law Research Center’s database on Declaration of State of Emergency and Related Instruments (*Olağanüstü Hal ve İlgili Belgeler*), using this URL: <https://web.archive.org/web/20240423192822/https://insanhaklarimerkezi.bilgi.edu.tr/tr/news/none-olaganustu-hal-ve-iligili-belgeler/> (Retrieved: December 5, 2023).

³KHK as an abbreviation will be used in the rest of this thesis to refer to decree laws.

Based on this legal foundation, the cabinet under the chair of President Recep Tayyip Erdoğan met on July 20, 2016, and declared a state of emergency for three months, citing the coup attempt suppressed a few days earlier, which resulted in the death of more than 300 people. The Turkish Parliament on July 21 ratified the cabinet's emergency rule decision. Later, the cabinet extended the duration of the emergency rule seven times, and it lasted until July 19, 2018. During this period, the cabinet issued 32 KHKs, 15 of which consisted of decisions regarding the dismissal of civil servants and security forces including police, gendarmerie, and military. Even though the cabinet issued the first KHK on July 23, 2016, the dismissal decisions were first enacted on July 27 with KHK No. 668. The last KHK with decisions on dismissals was enacted on July 8, 2018, with KHK No. 701, approximately ten days before the end of the emergency rule.⁴

The question is, how did the Turkish state come to this point?

2.2 AKP's Relationship with Gulenists

Gulenists' rise in the Turkish political landscape and deliberate infiltration of the state cadres, particularly during the AKP's incumbency, has been an understudied subject. To the best of my knowledge, previous studies lacked a comprehensive theoretical background substantiated with empirical evidence and could not go beyond the historical accounts of the relationship between the AKP and Gulenists. However, the symbiotic relationship between the two groups indeed provides abundant paths for scholars of authoritarian coalitions and bureaucratic policies.

In an infamous sermon by the notorious cult's leader Fethullah Gülen released in the 1990s, he laid down their modus operandi:

You must move in the arteries of the system without anyone noticing your existence until you reach all the power centers. (...) If you make premature moves before reaching full growth, before fully integrating with their essence, you may cause chaos in the world. It's premature to take any steps without drawing strength from constitutional institutions to your side. Until you reach maturity, until you have the strength to bear the weight of the world, until you represent that power, until you hold the reins of all Turkey's constitutional institutions, every step taken is premature. (Medyascope 2016; Taş 2018; Yavuz and Koç 2016)

⁴For reference, all KHKs published during the emergency rule, their publication date on the Official Gazette, and the date they became legislation can be found in Appendix A.

Even though they became very active as a grassroots mobilization after the 1980 Coup, Gulenists kept a low profile, particularly after the 1998 military intervention and their leader, Gülen, fled to the United States in 1999. His followers did not deviate from Gülen’s plan during the secular Kemalist cadres’ rising pressure on Islamist political groups nationwide and practiced *taqiyyah*⁵ to conceal their true religious and political identities until the conditions “reached maturity” (Yavuz and Koç 2016, 137). When AKP came to power in 2002, they were indeed not completely in line with this new face of the political Islamists who were mostly coming from the Naqshbandi-Khalidi branch while Gulenists followed the Nurcu Movement, led by Gülen’s antecedent Said Nursi (Fabbe 2021; Taş 2018).⁶ Nonetheless, incorporating Gulenists was a convenient step for the AKP since it gained the incumbency under a heavy Kemalist tutelage in state cadres and Gülen’s followers had already started to infiltrate them or train prospective bureaucrats to replace Kemalists (Yavuz and Koç 2016, 139).

In the aforementioned sermon, Gülen particularly mentioned the internal affairs and judiciary as useful targets as a “guarantee for their future.” Besides, collaborating with Gulenists to replace the old Kemalist cadres, and destabilize their status quo in state institutions, particularly in the judiciary and military, was acutely important for AKP to endure challenges for its survival posed by secular political elites such as the e-memorandum of the military against AKP in 2007 or the closure case against it in the Constitutional Court (Taş 2018; Turan 2019; Yavuz and Koç 2016; Önen 2022).⁷ The Gulenists infiltrated specifically the judiciary and military as the strongholds of the decades-old Kemalist status quo and further attacked these cadres with Ergenekon and Sledgehammer trials starting in 2009, persecuting high-ranking military officials. The 2010 Constitutional Referendum enabled the ruling coalition of the Gulenists and other factions of the AKP to hit the final blow to the judiciary by reorganizing its bureaucratic apparatus to enable easier infiltration and control of the appointments of judges and prosecutors (Dogan 2020, 61).

Nevertheless, the Gulenists’ ultimate aim was total control over the state under

⁵Esposito, John L. *The Oxford Dictionary of Islam*. 1st ed. Oxford University Press, 2003. <https://doi.org/10.1093/acref/9780195125580.001.0001>.

⁶Yavuz (1999), Hülür (1999), and Ertürk (2022a; 2022b) provide important accounts of how the Naqshbandi order was crucial for the establishment of the Turkish-Islam synthesis during the 1980s, deviating from traditional Kemalist secular nationalism, and how the cult itself impacted the establishment of the AKP. For further reference on the Nurcu branch, see Mardin (1989) and Nereid (1997). Mardin (2005) discusses the Islamic orders during the early years of the AKP, while Yavuz (2018) investigates the conflicts among competing Islamic orders within the AKP. For further reference (in Turkish) regarding the different Islamist orders and their involvement in politics, with a collection of primary sources, see Çakır (2002) and Bora and Gültengil (2018).

⁷For a further discussion on Kemalist cadres’ embeddedness with Turkish bureaucracy, check Heper (1976), Heper, Chong Lim Kim, and Pai (1980), Heper (1985), Keyder (1987), and Esen (2014).

theocratic leadership centered around their leader, despite packaging themselves as a moderate Islamist group. In contrast, the AKP cadres, including Erdoğan, held a long-standing belief in mass politics, despite their authoritarian tendencies. As the strength of their common enemies in the state cadres was eliminated with a series of collaborated attacks, the two factions' differences became more visible (Dogan 2020; Taş 2018; Yavuz 2018). This underlying rift between the two main factions of the coalition began to be publicly pronounced as early as 2010 with Israel's attack on the Turkish Mavi Marmara flotilla carrying aid to Gaza (Yavuz 2018, 24-25).⁸ While AKP politicians expressed their unequivocal support to Palestinians at least in the public scene, the Gulenist had a long-standing allyship with the West coming with the backing towards Israel in the Middle East (Dogan 2020, 65-66). Nonetheless, the real spectacle of the conflict between the two factions was when Gulenist judiciary cadres in 2012 subpoenaed the National Intelligence Service Undersecretariat Hakan Fidan, who is a very close figure to Erdoğan, for facilitating talks with the Turkish state and outlawed the Kurdistan Workers' Party (PKK) during the peace process which Gulenists also despised (Taş 2018; Yavuz 2018). However, then-PM Erdoğan later in 2012 officially attended the Turkish Olympics, Gulenists' biggest public spectacle, and called on Gülen to "end the yearning" and come back to Turkey (Ay 2012).

2013 became a year of intense conflict between the now openly conflicting rivals of the winning coalition. The AKP government first announced its plan to close university preparatory courses (*dershaneler*) which have been not just a massive financial source for the cult but also a suited ground for recruiting young cadres (Taş 2018, 400).⁹ Hence, Erdoğan made his intentions clear for cutting his former ally's resources to expand (Svolik 2009, 480). As a response, Gülenists cadres in the police and judiciary initiated a corruption investigation involving high-ranking AKP bureaucrats and ministers before the end of 2013. This triggered Erdoğan to deem Gülenists as a "parallel state"¹⁰ and launched another counter-attack, reshuffling, dismissing, or retiring thousands of public employees —particularly police officers, judges, and prosecutors (Özyiğit, Bedirhan and Şekeroğlu, Mustafa 2014). As a matter of fact, the AKP started to pacify Gulenists in law enforcement and the

⁸In his interview with a U.S. news organization for the first time ever, days after the attack that killed 10 volunteers, the cult's leader Gülen stated that organizing without Israel's consent "is a sign of defying authority, and will not lead to fruitful matters" (Lauria 2010).

⁹Along with these courses, the Gulenists also had a wide web of schools around Central Asia, Africa, Europe, South East Asia, Russia and various charter schools in the U.S. which the Turkish government has particularly lobbied against after the coup attempt to cut down the last hefty economic sources of the cult (Hall 2017; Norton and Kasapoglu 2016).

¹⁰Erdoğan referred to Gülen as *Hocaefendi*, meaning a prominent religious leader specifically used for Gülen by his followers, until he began using "Pennsylvania," the location of Gülen's compound in the U.S., around 2010-2013 to highlight his rival faction's organizational character as a group working together.

judiciary well ahead of the coup attempt, recognizing that these branches were the most convenient tools at the Gulenists' disposal to orchestrate further attacks. After AKP's victory in the 2014 local elections, Erdoğan made his infamous speech on their collaboration with Gulenists and said, "There cannot be a state within a state. They have infiltrated whichever institution they could. We have become victims of our own goodwill. But now it is time to weed them out within the framework of the law" (Hürriyet 2014).

In mid-2014, the first judicial processes against Gulenist cadres were also launched, deeming the organizations as the "Parallel State Structure," resulting in the arrest of hundreds while reshuffling in the state cadres was continuing. Upon criticism, Erdoğan said, "If reassigning those who betray this country from one position to another is considered a witch hunt, then yes, we will conduct this witch hunt" (T24 2014). At the end of 2015, a new investigation was launched against the higher echelons of the Gulenists including Gülen himself. Furthermore, Erdoğan renounced the Ergenekon and Sledgehammer trials, and arrested military officials were released in 2014 and 2015. During these years, the National Security Council, a consultative coordination body that provides policy advice on national security matters, described Gulenists as a "structure threatening public peace and security" in February 2014 and as a "terrorist organization" in May 2016 (MGK 2014, 2016).

Once started as a symbiotic relationship between not-so-similar factions of the Islamist movement, AKP's relationship with Gulenists was doomed to destroy one of them. AKP has used its foremost tool, the administrative capacity, to crack its former ally. Gulenists opted for the most costly option for the continuation of a faction in any winning coalition: initiating a coup. Resulting in hundreds of deaths and even the bombing of the parliament, Erdoğan emerged as a victor from this war on capturing the state. Believing in his political and administrative capacity and rallying around the flag effect across the country, Erdoğan also opted for the most costly option to construct his ruling coalition: a mass purge of bureaucrats.

2.3 Purging the Bureaucrats

I use the definition provided by Li and Manion (2023, 817) to conceptualize a purge as an extraordinary removal of a public employee from office, orchestrated by a top political leader and their close circle, justified within the norms of the regime. This conceptual framework also distinguishes between targeted purges and collective punishment, highlighting the extensive personal information authoritarian regimes

possess about state employees (Li and Manion 2023, 821-822). Easton and Siverson (2018, 601) have a different angle which I also found helpful and described a purge as “the permanent removal of members of the state leader’s winning coalition,” incorporating theory on coalitions which is suitable to my setting.

Historically, purges have been a common tool for autocrats to consolidate personal or group power. Drawing on theoretical frameworks of autocratic coalitions, scholarly attention has predominantly centered on purges of elites, aiming to elucidate how replacing inner circles aids autocrats in securing their longevity (Acemoglu, Egorov, and Sonin 2008; Aidt, Lacroix, and Meon 2022; Montagnes and Wolton 2019; Sudduth 2017; Svobik 2009). Stalin’s purges in the Soviet Union during the 1930s exemplify this approach, illustrating how purges are leveraged by autocrats to eliminate high-ranking elites and assert sole authority (Brzezinski 1956; Conquest 1990; Fitzpatrick 1979; Gregory 2009; Montagnes and Wolton 2019). Consequently, initiating a purge reduces the size of the winning coalition (Svobik 2009), facilitating the formation of a new ruling coalition around a new or more loyal cadre of state officials (Bueno de Mesquita and Smith 2016, 717). Being able to initiate a broad purge also tells about the capacity of the surviving faction since it is a costly process that can lead to further contention (Easton and Siverson 2018, 606). One can infer that Turkish President Erdoğan also had enough belief in his resources along with his supporters inside and outside the state for his survival after the coup. Nonetheless, I diverge from Woldense (2022, 1237) who did not accept a failed coup attempt as a useful event to expose internal opposition within a winning coalition. Even though I accept that mass purges are rare events (Woldense 2022, 1241), they do provide rich information regarding leaders’ relationships with their former allies, particularly when they occur as a “public spectacle,” as in the case of Turkey.

Furthermore, it is well-established that autocrats use their administrative power to reorganize state cadres to maintain their power in times of crisis (Bokobza et al. 2022; Kroeger 2020; Woldense 2022). In this regard, one might assert that authoritarian regimes can effectively target former allies engaged in power rivalries by leveraging their detailed knowledge of past political appointments. Therefore, I would anticipate systemic coercion by authoritarian governments against their former allies during purges, targeting their broader base. Focusing solely on small-N studies centered on purged high-ranking officers may not provide a comprehensive understanding of the broader impact of purges (Bueno de Mesquita and Smith 2016). The focus on mass purges has opened new avenues for scholars who do not view capturing bureaucratic capacity merely as a tool for power consolidation (Montagnes and Wolton 2019). While state cadres are crucial for an autocrat’s survival, they are also an integral part of the state for the delivery of day-to-day services (Acemoglu,

García-Jimeno, and Robinson 2015; Knack and Keefer 1995; Mann 1984; Rauch and Evans 2000; Williams 2021). Elite bureaucrats are often perceived as pillars of autocratic power, yet the significance of street-level bureaucrats to the broader public should not be underestimated, as they represent the face of the state (Huber and Ting 2021; Lewis 2007). Although studies exist on the impact of purging elites on state capacity, there remains a gap in understanding the consequences of purging street-level bureaucrats, partly due to a lack of empirical studies with comprehensive data. A nascent literature is beginning to explore how mass purges affecting various bureaucratic cadres influence decision-making and public service delivery (Li and Manion 2023), as well as how the behavior of bureaucrats changes during and after purges (He and Wu 2023), and which characteristics of public employees make them targets (Saijo 2023). However, there are not enough empirical studies to discover why a public employee might be allowed to work for two years and then be purged, nor do we fully understand how working in such an environment changes bureaucrats' behaviors. Thus, broadening the focus to encompass mass purges allows us to move beyond the question of why purges occur and comprehend their broader societal implications from a state capacity perspective without ignoring the importance of bureaucratic apparatus. These studies also align with existing literature exploring how coercive actions of authoritarian states shape bureaucratic behavior (Acemoglu et al. 2020; Breton and Wintrobe 1986; Fisman and Wang 2017).

For instance, He and Wu (2023) assert that the broad purges of local bureaucrats by the Chinese Communist Party during the 1950s led surviving bureaucrats to overperform or over-signal their attachment to duties, driven by the fear of being purged. Nonetheless, the authors note that this behavioral shift among bureaucrats exacerbated the famine by reporting excessive harvest volumes as they sought to demonstrate loyalty to the government's Great Leap Forward initiative aimed at dramatically increasing China's agricultural production. Montagnes and Wolton (2019) see Stalin's Great Purge in the 1930s as a tool for augmenting workers' labor due to the environment of fear it created. Operating within a broad purge environment also subjects bureaucrats to intense pressure and uncertainty about the continuation of their tenure, as also evidenced by research on purges targeting China's prefectural Communist Party secretaries in the 2010s by Li and Manion (2023).

This new line of research aligns with another recent body of literature that asserts losing patronage bureaucrats can lead to disruptions in public service provision, as governments often use patronage ties to appoint their allies to low-level bureaucratic offices (Brierley 2021; Brierley et al. 2023). Particularly during times of rapid change, such as a dramatic bureaucratic turnover following an election loss by a party with

strong patronage ties, scholars have observed a decline in essential services such as education (Akhtari, Moreira, and Trucco 2022; Toral 2019, 2024, Forthcoming). For instance, Toral (2024) asserts that patronage bureaucrats use their established ties with politicians to conduct day-to-day services in some fashion, and high bureaucratic turnover after a lost election can interfere with these somewhat practical networks, leading to the disruption of public services.

To the best of my knowledge, Bozcaga and Christia (2020) conducted the only empirical study employing Turkey’s purges. The authors used the purges to investigate the strongholds of the Gulenists’ service networks and their operational dynamics. They found that public service provision by the Gulenists did not arise due to low state capacity but rather flourished in areas with a strong presence of Islamist business associations that provided networks and resources. Apart from this study, the literature on the 2016-2018 purges is very scarce, hence open to be exploited and connected with the aforementioned discussions.

2.4 Collecting the Administrative Data on Purges

Every KHK was published in Turkey’s official gazette since required by the constitution. Those that included decisions regarding the dismissals of public employees also had very detailed lists of the dismissed bureaucrats including their respective departments, ranks or titles, and often the name of the province and/or district where they last worked. Up until September 1, 2016, the cabinet defined public officials who were dismissed from their profession as those “having membership, affiliation, or connection to the Fetullahist Terrorist Organization (FETÖ/PDY)¹¹, which has been established to pose a threat to national security.” Nonetheless, with KHK No. 672, the cabinet began to adopt a wider definition for the dismissed civil servants in which it defined them as those having a “membership, affiliation, or connection with organizations involved in terrorist activities or posing a threat to the national security of the state as determined by the National Security Council.”

By using the publicly available information, I have created a comprehensive dataset consisting of every dismissal announced on the official gazette after digitizing 2,971 pages of documents using optical character recognition (OCR) tools.¹² In total,

¹¹Turkish government uses acronyms FETÖ (Fetullahist Terrorist Organization) and PDY (Parallel State Structure) to refer Gulenists whom it recognized as an “armed terrorist organization” since May 2016 (Reuters 2016).

¹²Screenshots of the original documents as they were published in the official Gazette can be found in

I have collected 129,093 dismissals without reinstatement decisions. This aligns with the Turkish authorities' latest figures on dismissals, as reported by the Inquiry Commission on the State of Emergency Measures, which was established to review and adjudicate applications from those affected by the KHKs. According to the Commission, the number of public employees affected by the dismissals was 129,411. Nonetheless, the net number of dismissals was 125,678 as 3,733 dismissed personnel were reinstated with further KHKs with corrections (SoE 2023, 9). Hence, the difference between the government's number and the dataset is 0.2 percent. The small differences in numbers might have derived from human errors during the data collection process or the differences between institutions and how they calculate the total number. For instance, the Human Rights Association (İHD) put the total number at 135,147 (Öndül 2022, 24).¹³

Since KHKs were published in various periods and the dismissal lists were most likely prepared by different state departments, there were serious standardization issues in their original forms. First, I categorized the affiliations of the dismissed public employees into broader groups using the categories of the prime ministry, ministries, high judiciary (Council of State, Court of Cassation, and Court of Accounts), higher education institutions (i.e. universities), and parliament. It should be noted that the names and responsibilities of these departments might have been subject to change after the 2017 constitutional amendments. However, this research only considers the organizational hierarchy before 2017 for purposes of standardization, using the names of institutions as they were before 2017, even if they have since changed. This broader category, mostly nonexistent on original lists, was coded as "Institution" to reflect the highest possible administrative unit a public employee could be affiliated with. I also created different "Department" variables to code the smaller bureaus that a public employee could be affiliated with even though it does not apply to all of them due to varying levels of transparency of the dismissal announcement across ministries and other state departments. For instance, while the Ministry of Forestry and Water Affairs shared the dismissed employees with their respective units which can be pinpointed on a map, the Ministry of Interior often did not share any specific geospatial data about police departments.

I created "Province" (*il* in Turkish) and "District" (*ilçe*) to store the geospatial data

Appendix A.

¹³During the emergency rule, the ranks of 2,551 individuals from the police department, 35 individuals from the gendarmerie, and 703 individuals from the Turkish Armed Forces were annulled. In total, 3,046 institutions were closed. The breakdown is as follows: associations (1,598), federations (19), confederations (4), foundations (129), trade unions (19), news agencies (6), televisions (20), radios (25), newspapers (70), journals (20), publishing houses and distribution channels (29), education institutions (934), student dormitories (109), private health institutions (49), and private universities (15). As the scope of this paper only covers public employees and there is no publicly available information regarding the employees of these institutions, they are left out of the analysis.

mentioned in the administrative lists as the smallest geographical indicators. Other seldom indicated administrative units in the KHKs such as neighborhood (*mahalle*), village (*köy*), or town (*belde*) are coded within the nearest administrative unit, which is districts, for simplicity. Lastly, as nearly all the government units shared the ranks or titles of the dismissed public employees, I created a “Title (*Ünvan*)” variable for them.

For example, a dismissed “prison guard (*infaz ve koruma memuru*)” from “Balıkesir Bandırma T Type Closed Prison No. 1 (*Balıkesir Bandırma 1 Nolu T Tipi Ceza İnfaz Kurumu*)” is coded as “prison guard” under the Title variable, “Prison (*Ceza İnfaz Kurumu*)” under the first Department variable, and “T Type Closed Prison (*T Tipi Ceza İnfaz Kurumu*)” under the second Department variable. “Balıkesir” is coded under Province and “Bandırma” under District as geospatial indicators. Additionally, because all prisons fall under the jurisdiction of the Ministry of Justice, this information is coded under Institution. I implemented the same standardization process for all the smallest units in the data—a dismissed public employee in a given KHK.

2.5 Dismissals

The first three emergency decrees (KHK No. 668, 669, and 670) did not reflect the full extent of the bureaucratic purge that the government would carry out in the coming months. These decrees primarily targeted high-ranking military officers, including generals and their subordinates, along with police officers, whom the government determined to have “membership, affiliation, or connection to FETÖ/PDY,” particularly in relation to the recent coup attempt. The most significant impact on civil public employees came with KHK No. 672 on September 1, 2016, when over 50,000 public officials were dismissed from their posts in a single night, as can be seen in Table 2.1.

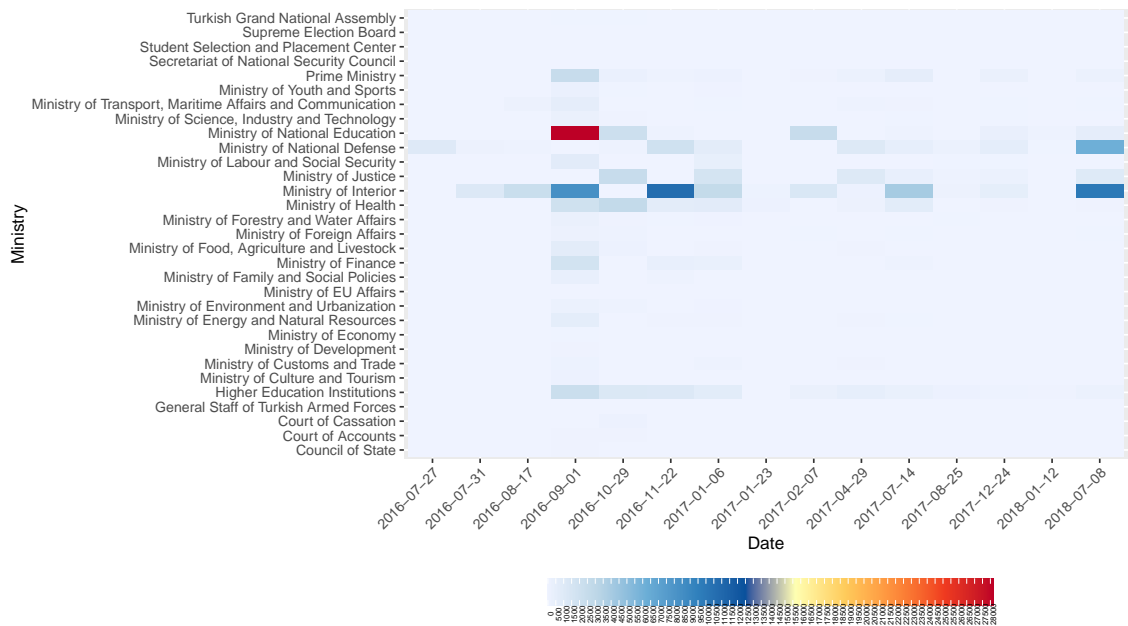
The government implemented a major purge in the Ministry of National Education, from which 28,162 personnel—mostly teachers—were dismissed from their positions just weeks before the start of the new school year. As can be seen in the heat map showing dismissals by the ministry in Figure 2.1 the shock experienced by the Ministry of Education represented the largest bureaucratic purge by personnel count for any institution during the period of interest.¹⁴

¹⁴Alternative visualizations of this heat map can be found in Appendix A.

Table 2.1 Number of Dismissals per KHK

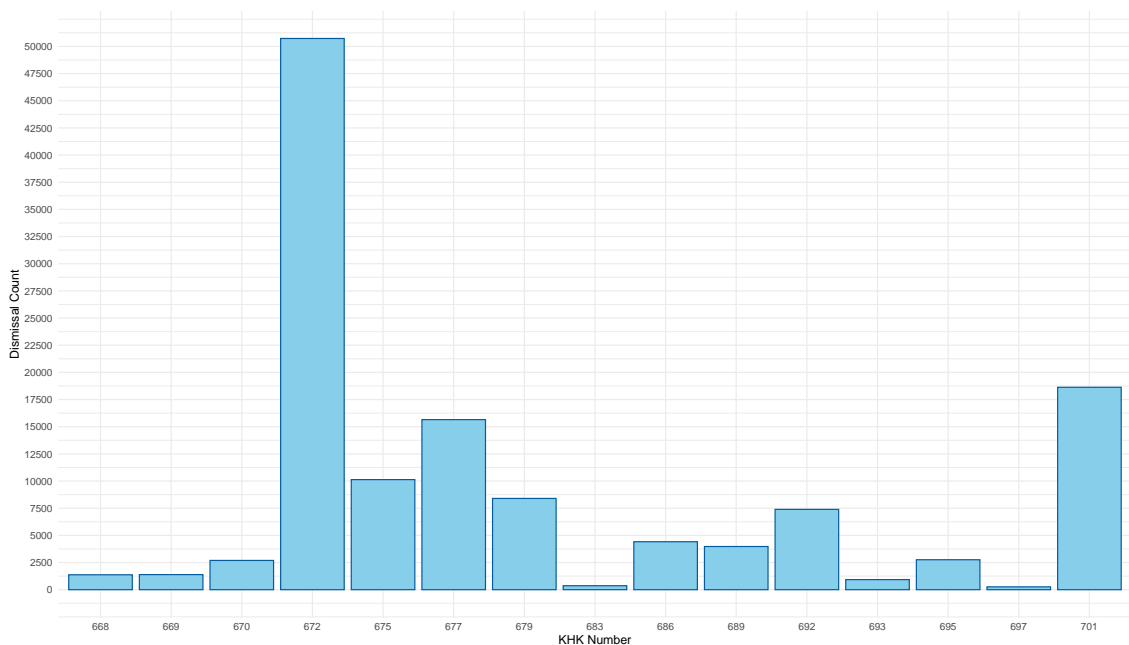
KHK No.	Year	Dismissal Number
668	2016	1,372
669	2016	1,389
670	2016	2,692
672	2016	50,732
675	2016	10,131
677	2016	15,653
Total for 2016		81,969
679	2017	8,399
683	2017	367
686	2017	4,414
689	2017	3,974
692	2017	7,393
693	2017	928
695	2017	2,757
Total for 2017		28,232
697	2018	262
701	2018	18,630
Total for 2018		18,892
Total (2016-2018)		129,093

Figure 2.1 Heatmap of the Dismissals by Date and Ministry



As shown in Figure 2.2 and Table 2.1, more than one-third of the dismissals were enacted through KHK No. 672. The two consecutive decrees issued in the final months of 2016 also led to the dismissal of nearly 26,000 street-level or high-level bureaucrats. In total the government purged more than 81,000 public employees from their posts merely in 2016 and created the biggest bureaucratic shock in all state institutions. Although the government continued to use decrees to purge public employees in 2017—a year when a constitutional referendum was held, transforming the regime to a presidential system—the number of dismissals in 2017 was considerably lower than in 2016 with roughly 28,000 dismissals. In 2018, the government delivered its final blow to public employees with KHK No. 701, dismissing nearly 19,000 public employees just days before the emergency rule ended.

Figure 2.2 Dismissal Numbers by KHKs



According to the quarterly public employee data shared by the Presidency of Strategy and Budget, 3.62 million civil servants were working in various departments in March 2016, of whom 2.92 million had permanent staff status.¹⁵ By December 2016, the total number had decreased to 3.56 million, with 2.85 million having permanent staff status. If we choose March 2016 numbers as a baseline, we can infer that approximately 2.26 percent of the state employees were affected by the dismissals in 2016. The trends in the personnel numbers are shown in Figure 2.3. As there are millions of employees, it is hard to track dismissals in a general graph, yet it reveals

¹⁵These numbers were obtained from the presidency’s public employee database (*Strateji ve Bütçe Başkanlığı Kamu İstihdamı İstatistikleri*) in June 2024, which can be accessed from the following URL: <https://web.archive.org/web/20240702160752/https://www.sbb.gov.tr/kamu-istihdami/> (Retrieved: June 30, 2024).

a particular trend for the replacements. While the number of contracted personnel was around 154,000 in March 2016, this number increased to 350,000 by December 2018.¹⁶ During this period, the number of permanent staff often decreased or remained stable. More detailed personnel numbers during the purges can be found in Appendix A, Table A.3.

Figure 2.3 Public Employee Numbers

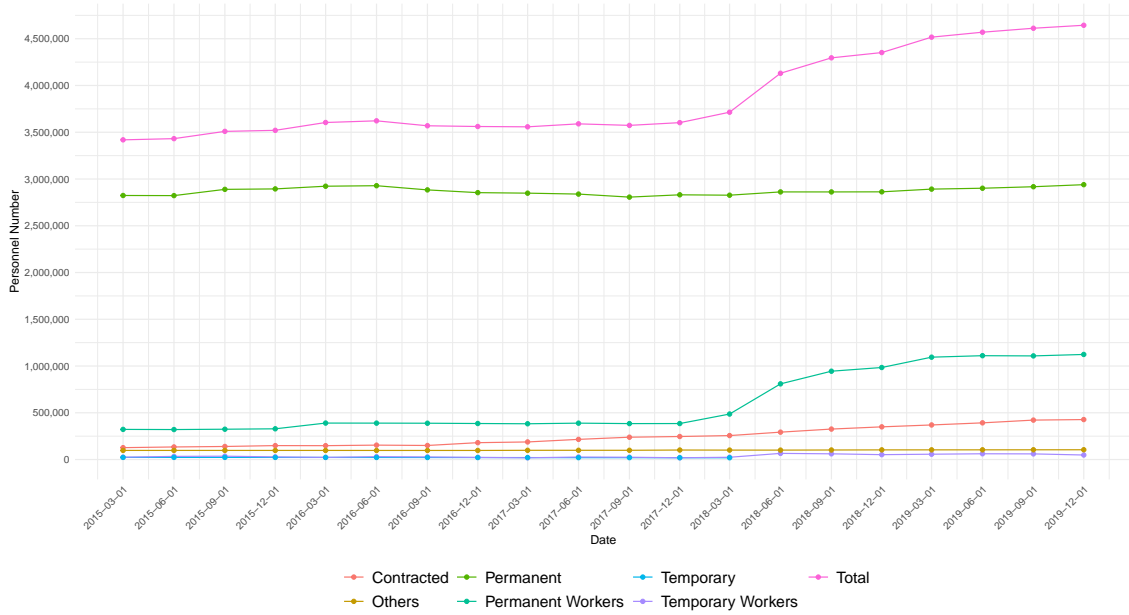


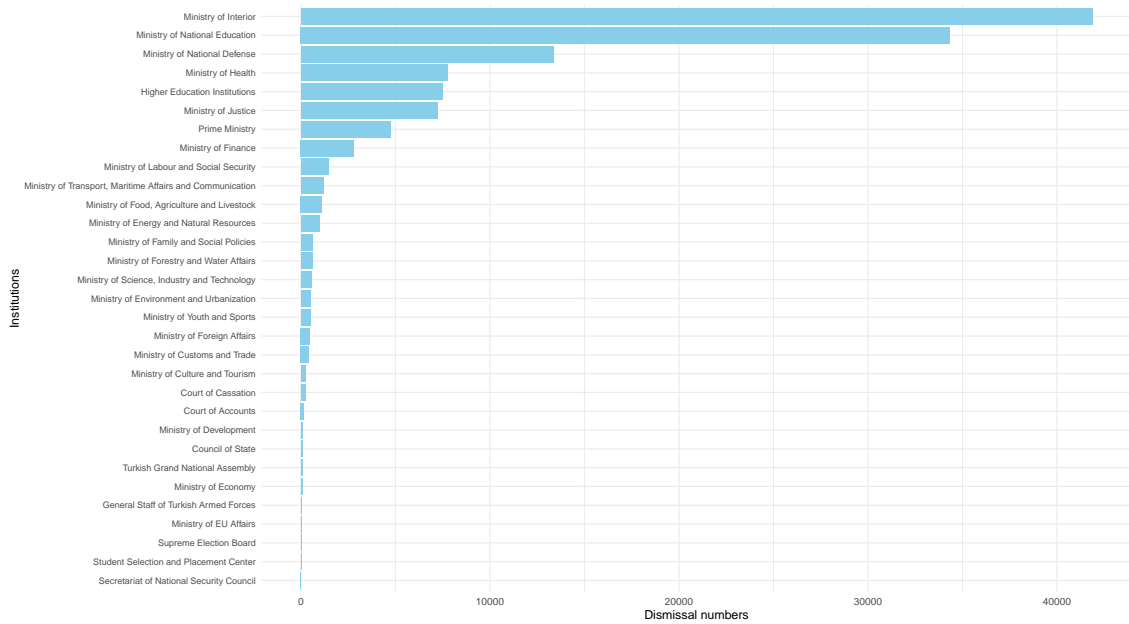
Figure 2.4 shows the number of employees purged from each institution.¹⁷ The Ministry of Interior ranks first, encompassing dismissed security forces including police and gendarmerie, along with personnel from elected local administrations (*mahalli idare*), such as municipalities, as well as appointed local administrations (*mülki idare*) like governors. It is evident that these purges affected personnel numbers without taking into account the new appointments. The Ministry of Interior’s central headquarters employed 2,647 personnel and provincial organizations had 24,425 personnel in 2015, but by 2016, these numbers had decreased to 2,440 and 23,816, respectively. (Turkish Ministry of Interior 2016, 2017). Moreover, while the number of police personnel in 2015 was 257,503, it decreased to 250,738 in 2016 (TurkStat 2022, 116). The purge’s impact on police officers will be further examined in Chapter 4.

As mentioned earlier, the Ministry of Education also saw high numbers of dismissals,

¹⁶Turkey also held its first elections, both general and presidential, after the coup attempt in June 2018, while emergency rule was still in effect. The peak in the number of contracted workers might be a result of a political business cycle although its rise started with the purges first during the last quarter of 2016.

¹⁷A detailed table with the exact number of coded dismissals per institution can be found in Appendix A.

Figure 2.4 Dismissal Numbers by Ministries



often at frequent intervals, placing it second after the Ministry of Interior. The change in the Ministry of Education will be analyzed in detail in Chapter 3; hence, it is left out of the discussion here. Although the Ministry of National Defense, which oversees the Turkish Armed Forces (TSK), along with the Ministry of Health and the Ministry of Justice, experienced fewer dismissals than the first two, they still had significant dismissals. The TSK had around 445,000 personnel, both military and civilian staff, in 2015, whereas it had nearly 399,000 as of December 31, 2016, (Turkish National Defense Ministry 2017). The Ministry of Health administers the public health system, which oversaw nearly 60 percent of the hospitals in the country from 2016 to 2018, with 540,160 personnel in 2015 (Birinci et al. 2019). Using the pre-purge personnel number and the purged employee number, one can infer around 1.44 percent of the medical professionals from the public health system were affected by the purges. The Ministry of Justice oversees judges, prosecutors, and prison administrations and it held the fourth place among all the institutions affected by the purges, yet I failed to obtain panel data on total personnel numbers from the ministry. Finally, higher education institutions hold the fifth spot, as the government purged 7,507 professors and administrative staff during this process. While the number of teaching staff in all universities was 156,168 in the 2015-2016 academic year, it decreased to 151,763 in 2016-2017.¹⁸

¹⁸These statistics on teaching staff were accessed via the Council of Higher Education's (YÖK) Higher Education Information Management System, which can be accessed via <https://istatistik.yok.gov.tr/> (Retrieved: June 15, 2024). The institution did not disclose the administrative staff statistics.

Although the government directly dismissed some employees working in the Prime Ministry, a larger number of dismissals were attributed to it because several independent state institutions were legally bound to the Prime Ministry. These included the Treasury Undersecretariat which became a ministry in 2018, the Disaster and Emergency Management Presidency, the Turkish Radio and Television Corporation (TRT), and others. However, the Directorate of Religious Affairs accounted for the largest portion of these dismissals coded under the Prime Ministry, with 3,330 personnel dismissed from their posts in this department alone while recruiting approximately 130,000 personnel in 2015. Hence, we can infer that about 2.7 percent of its staff was purged, once again, without taking into account the new employment.¹⁹

2.5.1 Spatial Distribution of the Dismissals

The government did not include geospatial information for all the dismissed employees. Certain ministries, such as the Ministry of National Education, the Ministry of Health, or most departments under the Prime Ministry, provided information about dismissed personnel along with their respective provinces and districts. However, some departments only shared specific branch names without geographic information. In such cases, I used the given branch names to recode them based on the nearest administrative regional unit available. For example, the Ministry of Interior provided only the names of gendarmerie stations for all dismissed security personnel from the Gendarmerie General Command. Therefore, I recoded their respective provinces or districts using the names of the stations. For instance, the geospatial data for the “Çakırsöğüt Gendarmerie Brigade Command (*Çakırsöğüt Jandarma Tugay Komutanlığı*)” is coded as Şırnak for the province and Center for the district, as these are the nearest administrative units to “Çakırsöğüt,” which is the village where this specific gendarmerie brigade is located.

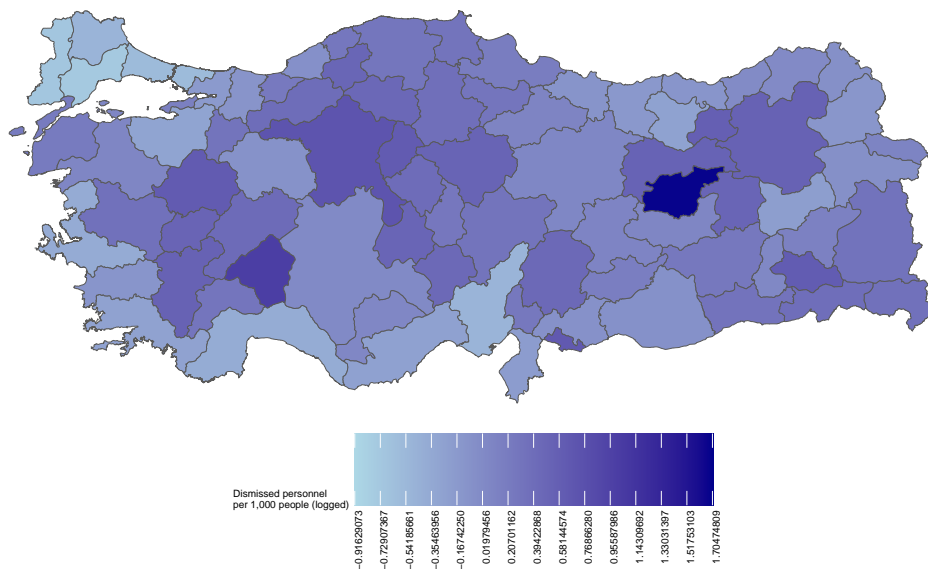
Additionally, employees working in the central headquarters of ministries were classified under Ankara’s Çankaya district, where most ministries are located, if those institutions specified district names for employees in other provinces. Despite this overrepresentation, the Çankaya district does not become an outlier in any of the further analyses in the thesis. I also excluded Aksaray’s Sultanhamı, Artvin’s Kemalpaşa, and Hakkari’s Derecik districts from the data as they became districts after 2016; thus, they appear on the maps featured in this research as grey areas. The

¹⁹I obtained personnel numbers for the Directorate of Religious Affairs from its database on Religious Statistics *Din İstatistikleri*, which can be accessed using this URL: <https://web.archive.org/web/20240702203258/https://stratejigelistirme.diyinet.gov.tr/sayfa/57/istatistikler> (Retrieved: June 15, 2024).

employees whose district was denoted as “Metropolitan Municipality (*Büyükşehir Belediyesi*)” were not included in the district-level analysis. This is because various numbers of districts can fall under this category, but the original data does not specify them.

Although the distribution of all the dismissals does not cover every state department, it includes key information from the major ministries, which contain the largest proportion of data, as opposed to smaller departments without geospatial information. While the government provided province information regarding 83,652 dismissed civil servants, it provided information regarding the districts of 54,273 of them as well. The map in Figure 2.5 shows all the units that have geospatial data and are located in one of the Turkish provinces. Figure 2.6 provides a more detailed map depicting the respective districts of the dismissed civil servants to show the regional distribution of dismissals with greater nuance. To create a more standardized version of the dismissals, I calculated their normalized count using population data from the Turkish Statistical Institute’s (TurkStat) Address-Based Population Registration System (ABPRS) for districts (LAU-1) and provinces (NUTS-3). All the values in the maps are standardized to represent one dismissal per 1,000 people in the respective administrative unit. A logarithmic transformation of these values is then applied to improve the visualization of differences among the various administrative regions.

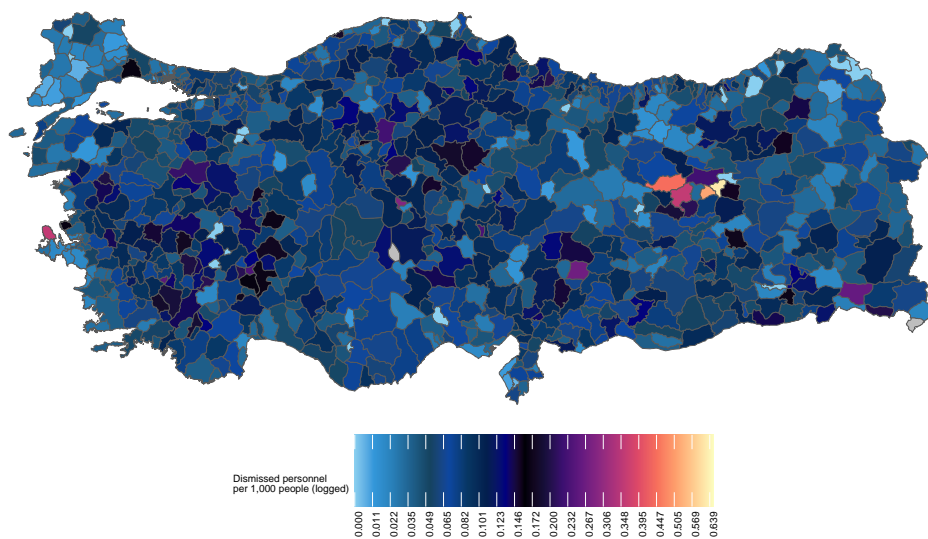
Figure 2.5 Standardized Count of Dismissed Personnel (Total, Province-Level)



I acknowledge that the maps themselves do not allow for causal inferences; nonetheless, they show some regional clustering, which will be further examined in Chapters 3 and 4. For example, the eastern province of Tunceli has the highest density among provinces for most of the institutions. However, this does not necessarily in-

dicade that Gulenists had a strong presence or extensive recruitment networks in the province. Tunceli became an outlier, particularly with later KHKs, which might indicate political motives in the later decrees, as Turkey’s marginalized Kurdish Alevi population predominantly populates Tunceli.²⁰ The instrumentalization of KHKs to purge political dissidents, particularly related to the Kurdish political movement, has been mentioned by many non-governmental organizations and human rights groups (Altıok 2018; IHOP 2018; Salman 2020; YAHADER 2020; Öndül 2022). For instance, a wave of dismissals affecting municipalities held by the pro-Kurdish Peoples’ Democratic Party (HDP) and its ally, the Democratic Regions Party (DBP), started in eastern Kurdish-populated provinces with the KHK No. 674 (September 2016). After the government’s amendment to the law on municipalities, the AKP captured power to replace the high-level elected officers—and dismissed hundreds of municipality staff—using the discourse on anti-terrorism (Adiguzel, Kaba, and Koyuncu 2024).

Figure 2.6 Standardized Count of Dismissed Personnel (Total, District-Level)



This phenomenon will be further explained in the chapter on the Ministry of Education using Tunceli as a case study. Nonetheless, as implicated by Li and Manion (2023), the extensive knowledge retained by authoritarian governments on their personnel can be instrumentalized to individually and collectively target certain persons and groups in times of bureaucratic purges. Therefore, the regional trends in the rest of this chapter should be read in light of this analysis since Turkey has a long history of geographical divides overlapping with contentious politics.²¹ These geographical

²⁰For further information about Kurdish Alevis, the readers can refer to Gültekin and Gezik (2017).

²¹For further reference on the geographical divides and contentious politics in the context of Turkey, you can

rifts extending over the political realm could allow a government to collectively punish political dissidents when the chance arises on the assumption that the public employees have a somewhat personal affiliation with the administrative unit that they have been working under, such as working in their hometown.

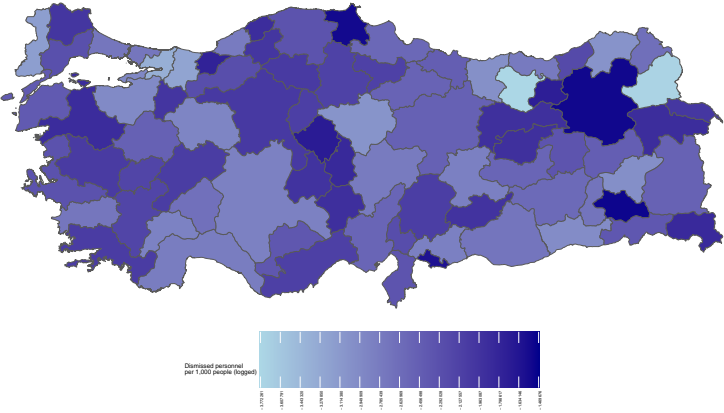
In a broader sense, the overall distribution at the provincial level shows a lower presence in the provinces on the Mediterranean and Aegean coasts, along with a clearer distinction in the Thrace region. It is noteworthy that these areas have been strongholds of opposition parties since the AKP took power in 2002. Specifically, the provinces of Edirne, Kırklareli, and Tekirdağ in the Thrace region have the lowest ratio of dismissals. This trend is also reflected in their districts, where dismissals are significantly lower compared to other areas.

In Appendix A, I also presented the results of three simple regression analyses testing whether being located in a specific region resulted in a higher likelihood of having dismissals. This was performed using different Nomenclature of Territorial Units for Statistics (NUTS) levels and dummy variables created for being situated in the Eastern Anatolian region. The formal testing results align with the visual representation of dismissals. Furthermore, a similar simple regression analysis was also conducted using pro-Kurdish HDP's vote share in the June 2015 general elections.

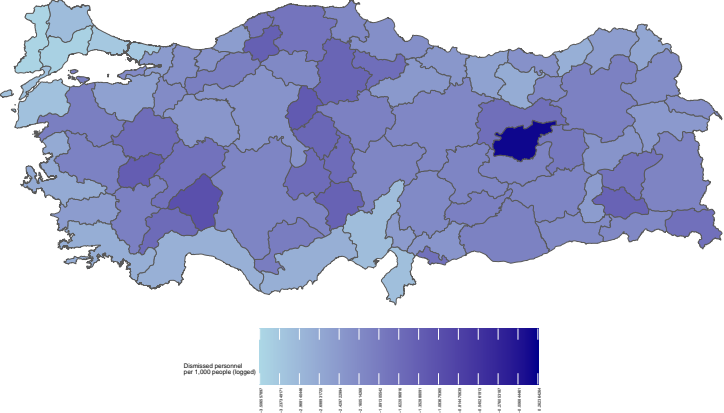
One point that should attract attention is that dismissals were also not homogeneous among different state departments. In Figure 2.7, the maps show different ministries and departments affected by the dismissals. For instance, although the eastern Erzurum province is one of the administrative regions highly affected by the dismissals in the Ministry of Justice, its close neighbor Kars province has one of the lowest dismissal rates in the ministry. While the eastern Tunceli province is one of the outliers in the Ministry of Health and Ministry of Interior, there is no data on dismissals for Tunceli under the Directorate of Religious Affairs. Indeed, this variation between neighboring provinces and even districts further demonstrates that the purges were implemented with a certain target whose strongholds were known by the government and they were not completely randomized.

check Mardin (1973), Baykan (2018), Bekaroğlu and Osmanbaşoğlu (2021), and Carkoglu and Kalaycioglu (2021). For a spatial analysis of the Kurdish issue, you can refer to Öktem (2004), Tejel Gorgas (2009), Jongerden (2007), and Gambetti and Jongerden (2015).

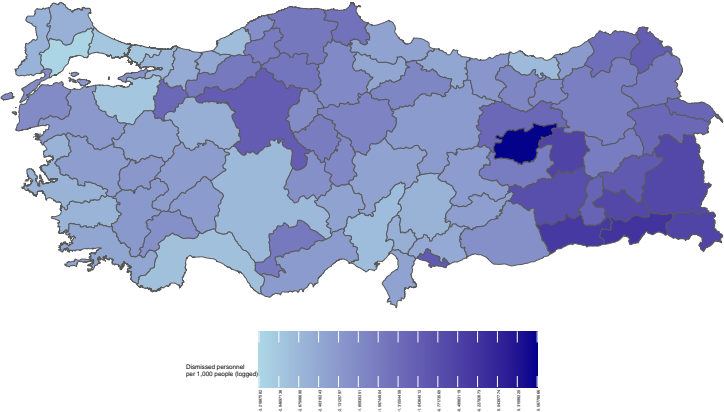
Figure 2.7 Standardized Count of Dismissed Personnel in Different Ministries



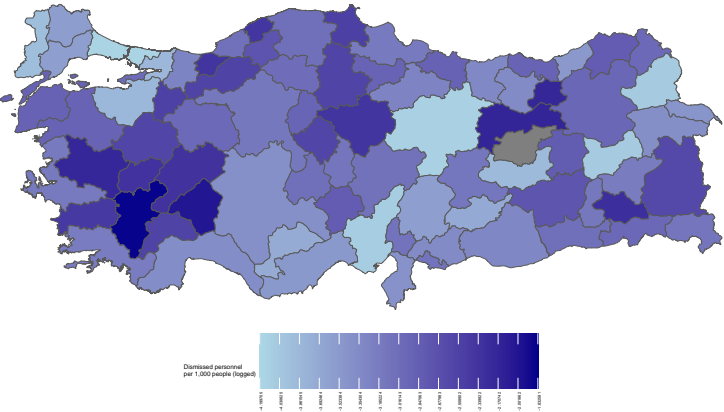
(a) Ministry of Justice



(b) Ministry of Health



(c) Ministry of Interior



(d) Directorate of Religious Affairs

3. MINISTRY OF EDUCATION

3.1 Introduction

The impact of teachers and school quality on student performance has become a fruitful topic for many scholars over the years without a consensus. While standardized test scores have been a widespread instrument for scholars to test teachers' influence on the academic performance of students, the number of unmeasured factors or issues arising from omitted variable bias that can affect students' overall performance such as personal motivation, economic background, or parents' involvement has created various methodological problems (Hanushek and Rivkin 2010; Kane and Staiger 2008; Rockoff 2004; Rothstein 2017). Many studies also suffered from a lack of longitudinal data on exam scores even at the district level (Matheny et al. 2023, 450). In this regard, the Turkish government's purge within the Ministry of Education during the emergency rule provides an opportunity to leverage this exogenous shock to estimate the impact of teachers on educational outcomes with a higher external validity (Bracht and Glass 1968; Findley, Kikuta, and Denly 2021).

The main reason for choosing the Ministry of Education was the magnitude of the purge's impact compared to other institutions. The ministry was affected by nearly 26 percent of all dismissals, with approximately 34,000 personnel dismissed, mostly teachers. The number of dismissals in the first semester of the 2016-2017 school year alone was nearly equal to 3.54 percent of the total number of public school teachers before the coup attempt. This also makes it a suitable case for integrating with the literature on the impact of bureaucratic turnover on public service provision. Additionally, the existence of a nationwide high school entrance exam in Turkey provided a standardized outcome variable, allowing me to track differences over a considerable period before and after the declaration of emergency rule in 2016.

This chapter begins with an introduction to previous studies on the impact of teachers on student performance, focusing particularly on value-added approaches that

estimate this relationship using test scores as the outcome variable and addressing some methodological issues. Building on the theoretical framework of these studies, I argue that the dismissal of teachers decreases student performance. To test this hypothesis, I first explain the data on dismissals affecting the Ministry of Education and their spatial distribution. To provide a more comprehensive understanding of the purges, I also incorporate perspectives from the country’s largest teacher unions and their findings on the dismissals’ impact on the public education system. I then describe the variables used in the difference-in-differences model employed to test my hypothesis. The final section presents the findings which support my initial hypothesis.

3.2 Teachers’ Impact on Student Performance

Since Hanushek’s (1971) influential study on the teachers’ impact on student performance, the literature on educational attainments has been dominated by one particular question: Does systematic differences among schools and teachers have a significant effect on academic performance of students (Rivkin, Hanushek, and Kain 2005, 418)? This initial question gave birth to abundant research settings estimating the impact of teacher and school qualifications on both immediate achievements such as exam scores and long-term attainments such as the likelihood of having esteemed jobs.

Hanushek (1971) laid the ground to test school and teacher qualities’ impact by adopting a value-added approach leveraging exam scores. In his many proceeding studies using similar estimates, he does not find a significant or consistent relationship between the teacher qualities and students’ standardized test scores (Hanushek 1997, 2003, 2020; Hanushek and Woessmann 2008; Hanushek and Rivkin 2010). He asserted that even though class sizes shrank and teachers became progressively more qualified, he did not observe any significant improvement due to these in student performances despite the growing funds allocated to the school system (Hanushek 2003, 67).

Nevertheless, test scores have still been a widespread tool that was conceptualized as an “indicator of cumulative educational opportunities” by many scholars (Matheny et al. 2023, 452). Accordingly, the test scores were leveraged as a proxy to estimate students’ overall educational experience and possible covariates to it, particularly the teachers’ qualifications and school quality in various settings with different school systems (Chetty, Friedman, and Rockoff 2014*a*; Clotfelter, Ladd, and Vigdor 2007;

Glewwe, Ilias, and Kremer 2010; Kane and Staiger 2008; Matheny et al. 2023; Rivkin, Hanushek, and Kain 2005; Strauss and Sawyer 1986). In this regard, the main line of research usually instrumentalizes two main proxies: teacher credentials and class size.

Teacher characteristics, from the level of degrees to the number of absences during a semester, have been repeatably found to be the core factor elevating students' exam performance (Clotfelter, Ladd, and Vigdor 2009; Matheny et al. 2023; Miller, Murnane, and Willett 2008). Darling-Hammond (2000) finds that teacher qualification and preparedness for a school environment were the strongest correlates for high student scores. Clotfelter, Ladd, and Vigdor (2007) estimate that a teacher's experience, along with other credentials such as having an advanced degree, has substantial effectiveness on student exam performance.

Additionally, the Student-Teacher Achievement Ratio (STAR) experiment conducted in the U.S. with nearly 6,400 pupils assigned to randomized classrooms of varying sizes opened up an advantageous path for scholars. By utilizing this randomized experiment, which was uncommon for the setting of the research topic, many scholars found that a reduction in class size resulted in higher exam scores (Finn and Achilles 1999; Krueger 2003; Mosteller 1995; Schanzenbach 2006). Krueger (2003, 61), in his re-evaluation of Hanushek's (1997) review on value-added estimations in the literature, reported that smaller class sizes, thus lower number of students per teacher, have a positive, yet easily obscurable impact on test scores under misspecified equations or small samples. Besides, Ding and Lehrer (2011) criticize the lack of attention to the heterogenous treatment that may have been experienced by the students in the STAR experiment and argue that smaller class sizes have a much more pronounced effect on students having higher scores in the past. Some other researchers found that particularly low-income students enjoy the advantages of small class sizes (Matheny et al. 2023; Rivkin, Hanushek, and Kain 2005).

Rivkin, Hanushek, and Kain (2005) estimate that teacher effectiveness on test scores is much more crucial than the costly reduction in class size when considering the school's impact. The authors also assert that as pupils advanced throughout the school system, the effect of class size on their performance decreased. Furthermore, while some studies assumed that teachers had a cumulative impact over time (McCaffrey et al. 2004), several others demonstrated that this fading effect was also observed with the teachers' impact on scores (Banerjee et al. 2007; Glewwe, Ilias, and Kremer 2010; Kane and Staiger 2008). Some also argue that focusing solely on test scores overlooks the broader impact of teachers on pupils, which may be greater than what is estimated by test score value-added models (Petek and Pope 2023).

Accordingly, these models fail to capture the influence of teachers on students' future achievements, such as college attainment or receiving higher wages (Chetty, Friedman, and Rockoff 2014*b*; Jackson 2018; Miller, Murnane, and Willett 2008; Petek and Pope 2023).

Recent literature on education outcomes has also been dominated by scholars questioning the validity of the value-added models (Kane and Staiger 2008; Petek and Pope 2023; Rockoff 2004; Rothstein 2017). One particular concern was the leverage of low-stakes exams which does not have a significant impact on students along with teachers or schools (Hanushek and Rivkin 2010, 268) along with the overrepresentation of elementary level students (Seebruck 2015). The likelihood of high omitted variable bias, which can arise from unobserved covariates of student exam performance such as personal dedication or parental control, also raised serious concerns among scholars (Corcoran 2010; Hanushek and Rivkin 2010; McCaffrey et al. 2004; Rothstein 2017). Besides, most of the previous studies did not even use school or district fixed effects to control for unobservable effects mostly due to lack of proper panel data or model specification (Abdulkadiroğlu et al. 2017; Goldhaber and Brewer 1997; Seebruck 2015). The school, student, or district fixed effects were also found to be insufficient due to the amount of time-varying confounders that can "contaminate" research designs (Rivkin, Hanushek, and Kain 2005, 419).

In this sense, I believe a sudden decrease in the number of teachers available in a centralized public education system that mandates students to take standardized nationwide tests is an ample opportunity to revisit the issues raised before. Indeed, this was Turkey's experience during 2016-2018 when the government purged at least 34,000 teachers nationwide and suspended many others from their jobs starting just before a new school year. One of the main aims of this thesis is to test whether the dismissals of public servants affected public service provision and, if they did, how. In this regard, the literature on teachers' impact on student performance using test score value-added estimates provides a fertile ground to test my main hypothesis:

H₁ : Dismissal of teachers decreases student performance.

3.3 Dismissals in the Ministry of National Education

The first decree law impacting Ministry of Education personnel was enacted on September 1, 2016, nearly two weeks before the start of the 2016-2017 school year. In a single night, 28,163 civil servants, predominantly teachers and a relatively small

number of school inspectors, were dismissed from their posts across every province in the country. Similar to many dismissals in other state departments, purges within the ministry occurred sporadically between 2016 and 2018.

Before the purge began, the ministry employed nearly 863,000 teachers during the 2015-2016 school year (Turkish Ministry of National Education 2016). By the end of the first semester of the 2016-2017 school year, approximately 882,000 teachers were employed, along with 17,877 newly contracted teachers (Turkish Ministry of National Education 2017*b*). By the end of the 2016-2017 school year, the number of teachers decreased to roughly 868,000, with 18,752 contracted teachers (Turkish Ministry of National Education 2017*a*). A more detailed description of the education statistics can be found in Appendix B, Table B.1.²² While student numbers remained relatively stable during the purges, it is noteworthy that many closed private schools that the government found to be owned by the Gulenists were expropriated and integrated into the public education system with most of their students. As there has not been publicly available data on the private sector teachers whose licenses were revoked, it is hard to estimate how many teachers from these schools continued to work, if there were any. The publicly available purge data revealed that before the end of the first semester in 2016, 30,513 staff were dismissed, directly affecting nearly 3.54 percent of the personnel compared to the end-of-year numbers from the 2015-2016 school year.

Table 3.1 Number of Dismissals on Ministry of Education per KHK

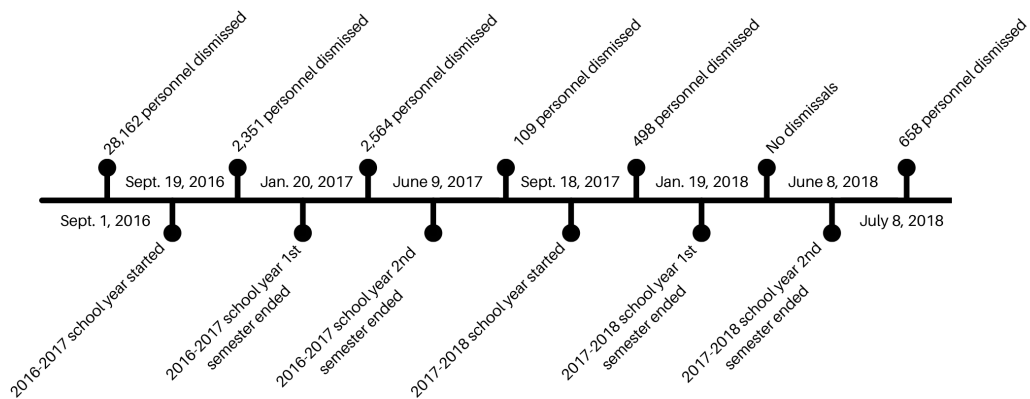
KHK No	Date	Dismissal No
672	September 1, 2016	28,162
675	October 29, 2016	2,219
677	November 22, 2016	119
679	January 6, 2017	13
686	February 7, 2017	2,535
689	April 29, 2017	29
692	July 14, 2017	102
693	August 25, 2017	7
695	December 24, 2017	392
697	January 12, 2018	106
701	July 8, 2018	658

As shown in Table 3.1, none of the emergency decrees published after KHK No. 672 reached the same magnitude as the initial wave of the purge. The 2016-2017 school year began on September 19, 2016, and ended on June 9, 2017. The government issued another significant dismissal decision on October 29, 2016, during the first

²²All these statistics are derived from the ministry's national education statistics for formal education (Turkish Ministry of National Education 2016, 2017*a,b*, 2018, 2019).

month of the school year, dismissing 2,219 personnel. Another wave of dismissals occurred on February 7, 2017, the second day of the spring semester, with 2,535 personnel dismissed. All of these dismissals took place within the same school year. In the following school year, which began on September 18, 2017, and ended on June 8, 2018, the government dismissed 498 personnel—392 during the fall semester and 106 just one week before the end of the semester. Additionally, 658 personnel were purged during the summer holiday before the start of the 2018-2019 school year. This chronology of the events can be better seen in Figure 3.1.

Figure 3.1 Chronology of the Dismissals (2016-2018)



As mentioned in Chapter 2, to create a more standardized version of the dismissals, I estimated their normalized count using population data from TurkStat’s ABPRS database for districts and provinces. Since the data was clustered according to age, I only used the population of school-age children between 5-19. Therefore, the dismissals are represented per 1,000 school-age population at a given administrative level. Better standardization would have been possible if the ministry had publicly available personnel data for the districts; however, I failed to obtain such information.

As the map in Figure 3.2 demonstrates, the first wave of dismissals started with the KHK No. 672 clustered particularly around the Central Anatolian and Inner Aegean provinces while the Thrace and Eastern/Southeastern Anatolian provinces have experienced the shock in relatively lesser magnitude. Mediterranean Isparta (4.27); Aegean Uşak (3.70), Kütahya (3.59), Denizli (3.43); and Central Anatolian Kırıkkale (3.36) had the highest rates of teacher dismissals. In contrast, Eastern Anatolian provinces such as Şırnak (0.21), Hakkari (0.24), Muş (0.39), and Ağrı (0.40); along with Ardahan from the Eastern Black Sea (0.46), experienced the

Figure 3.2 Standardized Count of Dismissed Teachers (Province Level-KHK672)

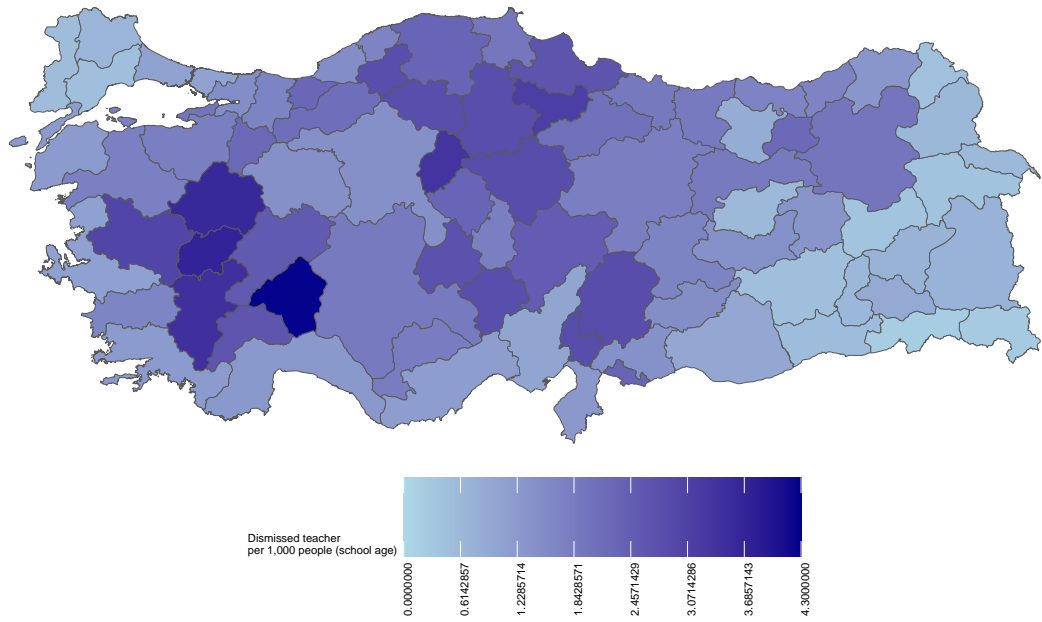
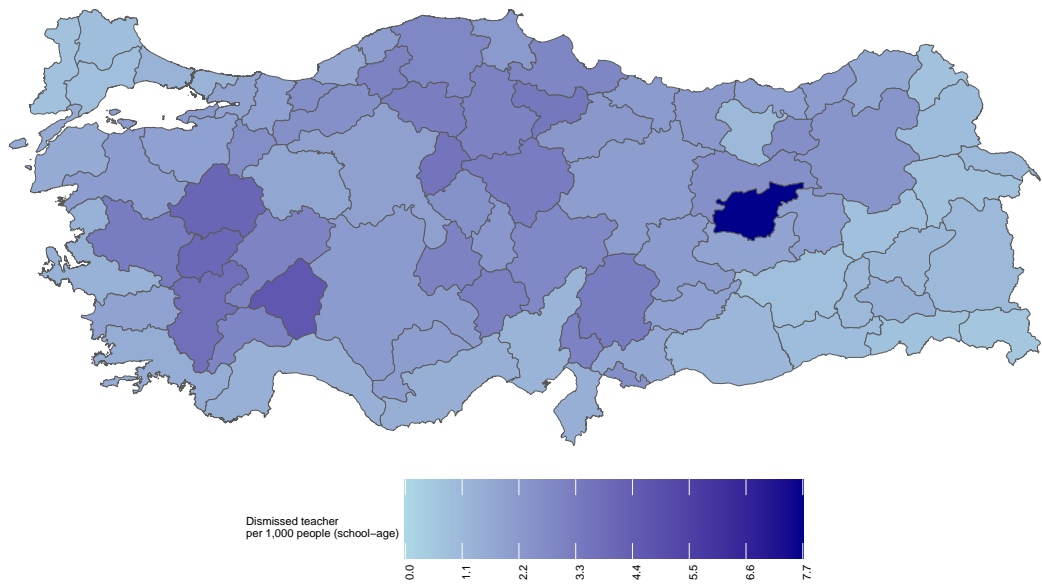


Figure 3.3 Standardized Count of Dismissed Teachers (Province Level-Total)



lowest rates of dismissals.

When considering all the dismissals in an aggregated manner, the overall picture changes slightly. This is particularly evident because Tunceli province, which initially experienced one of the smaller waves of dismissals, became the province with the highest ratio of dismissals (7.69) over the course of two years. It is followed by Isparta (4.63), Kütahya (4.13), Uşak (4.05), and Denizli (3.77) provinces. On the other hand, Hakkari (0.592), Şırnak (0.766), Ardahan (0.797), Edirne (0.798), and Ağrı (0.807) provinces experienced dismissals in the least magnitude. As Figure 3.3 shows, the total number of dismissals affected the inner Aegean and Central Anatolian regions to a greater extent, while the Thrace, Eastern Anatolia, and Eastern Black Sea regions were impacted by the purges to a much lesser degree.

A total of 864 districts out of the 970 existing districts in 2016 were affected by the first wave of dismissals. However, the magnitude of the effect varied across the country. I assigned a count of 0 to the 106 districts that did not experience any dismissals with KHK No. 672. Nonetheless, the distribution of dismissals per 1,000 people was highly left-skewed due to outlier districts with extremely higher values than the mean.²³ To address this issue, I conducted a log transformation to create a normally distributed variable for the dismissals at the district level.

As Figure 3.4 indicates, the distribution of the first wave of dismissals at the district level more clearly highlights differences between regions. While districts in the Eastern region of the country experienced the lowest levels of bureaucratic shock, with even smaller differences among districts in the same province, the Central Anatolian districts were impacted to a greater extent by the shock. Outliers such as Aegean İzmir's Karaburun (27.37), Uşak's Ulubey (7.68); Isparta's Atabey (7.50); Samsun's Salıpazarı (7.06) in the Black Sea; and Aegean Denizli's Babadağ (7.03) districts stand out, with substantially higher numbers of standardized dismissals.

I applied similar procedures for the total number of dismissals at the district level, as shown in Figure 3.5. A total of 65 districts were never affected by the dismissals issued between 2016 and 2018. Most importantly, when the total number of dismissals is considered, particularly the outliers changed. İzmir's Karaburun district is still the one most affected by the dismissals (27.37) even though there were not any other dismissals coded after KHK No. 672 in this area. It shared the top five districts with the eastern Kahramanmaraş province's Nurhak district (11.09). On the other hand, eastern Tunceli province's districts began to dominate the dismissals with Ovacık (11.26), Center (11.09), and Pülümür (10.63) districts with the addition

²³While the mean for the first dismissals was 1.53 the maximum value was 27.37.

Figure 3.4 Standardized Count of Dismissed Teachers (District Level-KHK672)

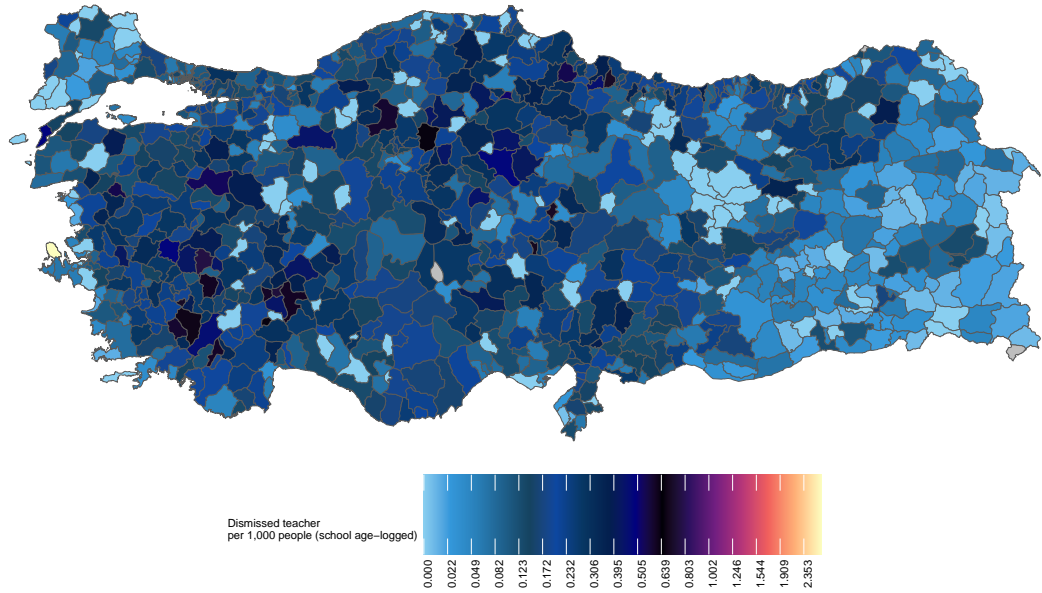
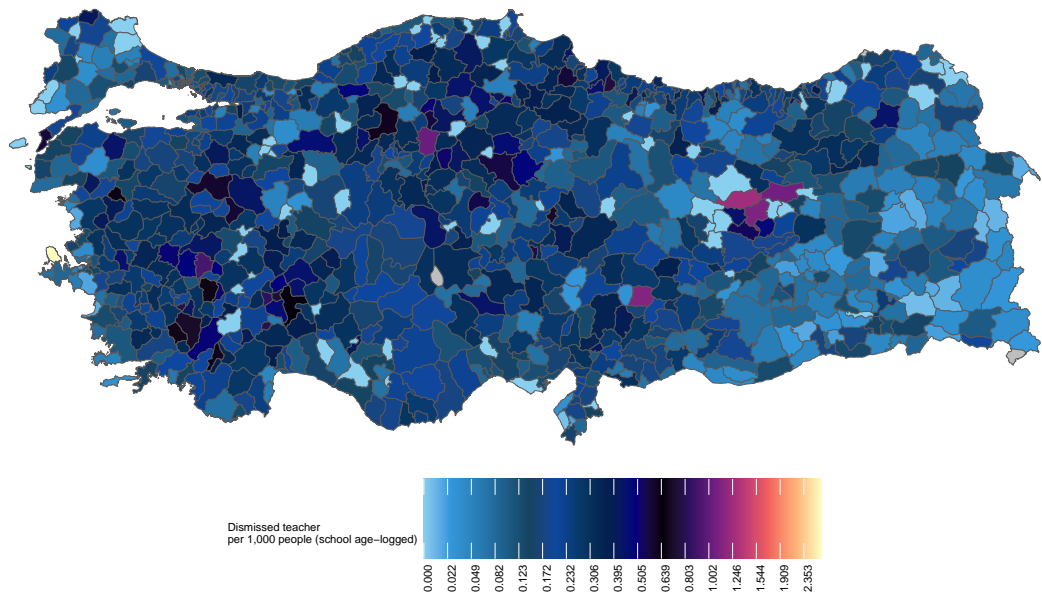


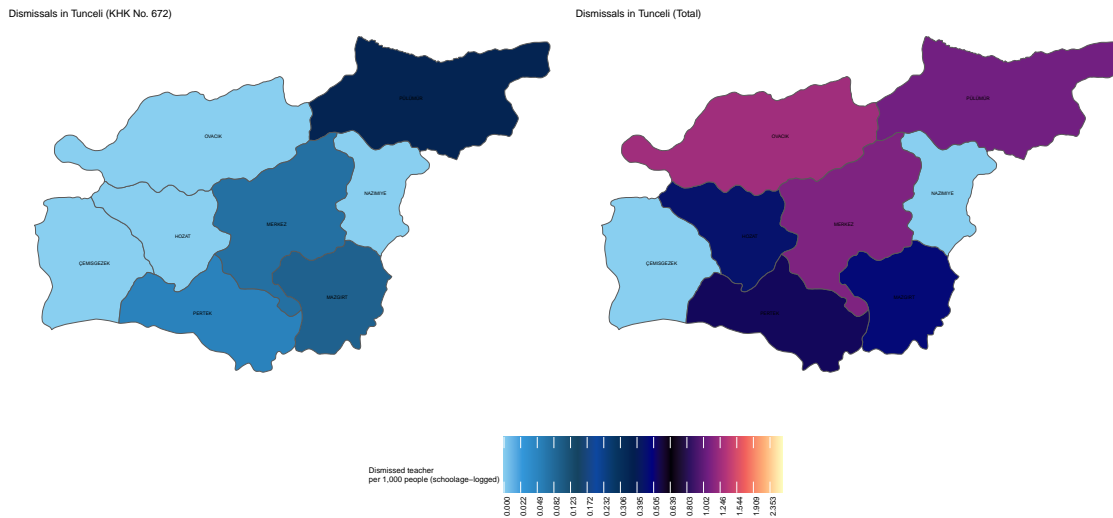
Figure 3.5 Standardized Count of Dismissed Teachers (District Level-Total)



of dismissals enacted with KHKs after the first one.

A clearer change in Tunceli’s experience with the dismissals can be found in Figure 3.6. This special case can serve as an indicator of the forthcoming criticisms by teacher unions in the next section, which deemed KHKs instruments used by the government to target political opponents within the state cadres. As a province densely populated by the Kurdish Alevi population, Tunceli’s probability of being a stronghold for Gulenists is highly unlikely, given that the cult is based on Sunni indoctrination merged with Turkish nationalism (Yavuz and Esposito 2003). Therefore, it is likely that the government initially targeted Gulenists with the first waves of KHKs, while the later ones were specifically directed at targeting political dissidents (Montagnes and Wolton 2019). The leftist union Eđitim-Sen’s statements from the period align with these findings, as they reported that most of their members in eastern provinces such as Tunceli were either dismissed or suspended during the emergency rule, leaving the province nearly without a functioning public education system (Evrensel 2016; Eđitim-Sen 2018).

Figure 3.6 Change in the Dismissal Rates in Tunceli Province



It is worth mentioning that one of the main sectors targeted by the Gulenists was education; hence, finding parallels between their networks and the earlier phases of the purges would not be completely random (Agai 2010; Aras and Yorulmazlar 2018; Taş 2018; Yavuz and Koç 2016). In an interview right after the dismissal of 28,000 teachers, then Undersecretary of the Ministry of Education Yusuf Tekin, who became the Minister of Education in 2023, stated that the Ministry had been prepared for this for three years since 2013 (Dursun 2016). Accordingly, the then-undersecretary revealed that the ministry briefed state organs to end the “tutelage”

of Gulenists when the controversy over the closure of university preparatory courses started in November 2013. The minister told a crucial anecdote and stated that Gulenists “came to them” for the sake of continuation of students’ dependency on university preparatory courses and to prevent the enactment of the new central high school exam system planned to be implemented in November 2013:

At the end of November, just one day before the exam, the teachers who were supposed to proctore the exam started taking sick leave en masse. We realized we were facing sabotage and noted down who was behind it. After the coup attempt, when it was decided that dismissals and closures would be enforced through decrees, we already had our lists ready. (Dursun 2016)

Nonetheless, making a certain inference with the data in hand is impossible as it does not contain any information regarding the individual reasons to be purged even though the ministry claimed that they had taken into account dozens of parameters such as having accounts in Gulenist banks, using ByLock,²⁴ trade union and association memberships along with raising money for the cult (Dursun 2016).

3.3.1 Teachers’ Perspective: What Did Unions Say?

The impact of these dismissals was also acknowledged by various teacher unions from different political affiliations. Firstly, both leftist unions such as the Education and Science Workers’ Union (Eğitim-Sen), and pro-government unions such as the Educators’ Union (Eğitim-Bir-Sen) stated in several press releases and evaluations for the 2016-2017 and 2017-2018 school years that the KHKs aggravated the existing teacher shortage in the country (Eğitim-Sen 2018; Çelik et al. 2017).

For instance, the Turkish Union of Public Employees in the Education, Training, and Science Services (Türk Eğitim-Sen), a conservative labor union without a strong stance against the government, put the number for the shortage of teachers at 100,000 for the 2016-2017 school year and criticized the instrumentalization of KHKs along with suspensions as a method “to eliminate innocent people” by certain factions inside the government (Türk Eğitim-Sen 2016). The same union cited then-Minister of Education İsmet Yılmaz regarding the shortage of 96,068 teachers at the end of the first semester and criticized the government’s attempt to address the

²⁴ByLock was an encrypted smartphone messaging app in which Turkish government found that Gulenists used to communicate with each other. However, in 2023, the European Court of Human Rights ruled in the Yüksel Yalçınkaya v. Turkey case that the right to a fair trial was violated due to the inability to question the authenticity of ByLock data, that using ByLock alone was insufficient evidence for membership in an armed terrorist organization, and that convicting based solely on ByLock use created an almost impossible presumption of guilt, violating the principle of no punishment without law (ECHR 2023).

problem by appointing contracted personnel (Türk Eğitim-Sen 2017a). The Confederation of Public Servants Trade Union (Memur-Sen), the right-wing confederation that Eğitim-Bir-Sen belonged to, also criticized the large number of dismissals and their impact on education after a strong message against the Gulenists in its evaluation of the first semester (Genç Memur-Sen 2017). I particularly find their press release crucial as a union close to the government:

It is necessary to punish those found guilty and to reinstate the innocent ones as soon as possible, considering the professional and social repercussions of keeping many teachers on suspension, with many still not having undergone any review/investigation. The application of different procedures between provinces or institutions, unnecessary and prolonged suspension measures, and the failure to reinstate those without any judicial or administrative action against them are causing unrest among education workers and negatively impacting education and teaching. (Genç Memur-Sen 2017)

It is noteworthy that, as a result of dismissal from public office, it becomes impossible for dismissed personnel to work in another public institution, and they are stripped of most benefits of being a citizen, such as possessing a passport. The dismissed employees also faced several rights violations such as an instant freeze on all assets, inability to obtain credit cards, and being stigmatized, preventing them from working in the private sector due to public announcements of their names (YAHADER 2020). This provision particularly caused unrest among even conservative unions, as it was deemed “civic death.”

Labour Union of the Labourers of Education and Science (Eğitim-İş), a left-wing union, in its end-of-the-school-year press release, stated that the shortage of teachers in public schools, which was around 120,000 before the coup attempt, has doubled due to suspensions and dismissals during the state of emergency, leaving approximately 1.51 million students without teachers (Eğitim-İş 2017). According to the union, although the ministry indicated that a significant portion of the teacher shortage would be addressed with surplus teachers, this method has not been effective since the majority of surplus teachers work in metropolitan areas. Surplus (*norm fazlası* in Turkish) teachers are those employed at a school where the number of staff exceeds the school’s requirements. The government argued that these personnel would have been enough to cover the teacher shortage after the employment of contracted teachers (Dursun 2016; Öztürk 2016).

For the 2017-2018 School Year, Türk Eğitim-Sen stated that the shortage of teachers increased to nearly 107,000 with further dismissals (Türk Eğitim-Sen 2017b). Eğitim-Sen noted that the teacher shortage increased to 109,000 and was further

aggregated by the public teachers leaving their profession due to the “intense pressure of the KHKs” (Eğitim-Sen 2018). Eğitim-Bir-Sen emphasized that while the net need for teachers was 77,000, the actual need was around 120,000 due to surplus teachers often being unable to relocate to needed areas because of reasons such as family ties (Çelik et al. 2017, 140).

As mentioned by numerous unions, teachers were not merely dismissed but also suspended from their positions during the emergency rule. For instance, until September 8, 2016, the ministry suspended 11,301 teachers who were not on the KHK lists (Evrensel 2016). Of these, 9,843 were members of the left-wing union Eğitim-Sen, the vast majority of whom were teachers working in eastern provinces and allegedly had ties with the outlawed Kurdistan Workers’ Party (PKK) (Öztürk 2016).²⁵ Nonetheless, as there is no district-level data on these suspensions and they are regionally clustered with a different method of government targeting, they were not added to the analysis.

As early as August 2016, Eğitim-Sen scolded the government’s mass suspensions and plans to enact a new contract-based teacher recruitment system using “interviews” for the first time (Eğitim-Sen 2016). The aforementioned statistics on teachers also demonstrate that this practice began to be widely implemented by the ministry to eliminate teacher shortage. The union primarily highlighted that the rapid suspension of tens of thousands of civil servants has indicated that extensive preparations based on “political profiling” were made prior to the coup attempt. It also added that the system of contracted civil servants would have served as a method that facilitates the AKP’s “staffing within the state” and, based on past experiences, led to a “decline in the quality of education” (Eğitim-Sen 2016).

The unions’ statements are particularly crucial because they are in line with the aforementioned studies on value-added models on student performance. Teachers’ experience is a crucial phenomenon for student performance as the new recruits should have gone through a possibly tiring adjustment process and some may leave their posts if the conditions do not match their expectations (Rivkin, Hanushek, and Kain 2005, 448). This would contradict the government’s claims on balancing the shortage with contractual teachers who possibly did not have any previous experience or surplus teachers who would have a hard time facilitating moving to a different school, as unions noted. Furthermore, even if the dismissal of teachers

²⁵ While 1,358 of these suspended teachers were not members of any union, 51 members of Eğitim Bir-Sen, 40 members of Eğitim-İş, and four members of Türk Eğitim-Sen also suspended from their posts (Evrensel 2016). According to Eğitim-Sen, 4,300 teachers who were members of its union were suspended in just Diyarbakır province. In Tunceli, 504 union member teachers were suspended, meaning one in every two teachers in the province. In Mardin, 1,780 members were suspended; in Batman, 946; in Adıyaman, 466; in Şanlıurfa 462; in Elazığ 99; and in Bitlis, 97 members of Eğitim-Sen were suspended (Evrensel 2016).

would likely create a short-time shock in the education system, this would once again disrupt the education attainments since most of the teachers were dismissed just before the start of the school year, in a period where teachers' impact found to be higher on students (Kane and Staiger 2008).

3.4 Data and Research Design

3.4.1 Data

For my dependent variable, I collected national, standardized high school entrance exams from 2013 to 2019. Compared to most of the studies, my research design does not suffer from a lack of panel data (Matheny et al. 2023) and captures a high-stakes exam setting (Seebruck 2015). The dependent variable, Exam Score, was created by calculating the z-scores of the high school threshold scores. This process standardized the variable across the same year and among different years.

I began with the 2013 Level Determination Exam (*Seviye Belirleme Sınavı (SBS)* in Turkish) because it was the first exam to account only for the national exam grades of eighth graders. Its predecessors had considered all the different exams taken throughout middle school, so the grades did not reflect the performance of students for a specific year. From 2014 to 2017, the ministry implemented the Transition from Primary to Secondary Education system (*Liselere Geçiş Sınavı (TEOG)*), which was only conducted for eighth graders. Later, the High School Entrance System (*Liselere Geçiş Sınavı (LGS)*) was conducted in the same format. While the names of these exams were subject to change throughout the years with a promise of creating a more “stress-free” process for students to place high schools, their essence has not changed and even become more centralized (Caner and Bayhan 2020). I excluded years after 2020 to avoid issues caused by the COVID-19 pandemic's impact on the standardized test system as it might have a systematic influence on the students' performances. Additionally, in 2018, the ministry introduced a different entrance system and removed threshold scores for most high schools.²⁶ In many provinces, top schools from a few districts often continued to require standardized exam scores for admission whereas others adopted an address-based system that does not require an exam score for admission. As the adaptation of the new system resulted in a significant decrease in the sample size since some districts did not have any schools

²⁶Caner and Bayhan (2020) state that the Turkish government designated about 10 percent of the schools in the country to accept students with exam scores while the rest were deemed “catchment-based” schools.

requiring exam scores for registration, I tested my model using two periods: one from 2013 to 2017 and another from 2013 to 2019.

I collected publicly available threshold scores for high schools from online newspapers, education blogs, and the Ministry of Education’s exam reports.²⁷ A threshold score represents the exam score of the last student admitted to a high school, serving as a “success indicator” for prospective students in subsequent years. While every student has the option to create a list of preferred high schools from every province in the country, student mobilization has traditionally been limited, especially across provinces. As part of the main analysis, I analyze the top schools from every district throughout the year as the main dependent variable.²⁸

One particular drawback of this research design is that the ministry did not disclose the fields of the teachers. Therefore, one cannot know whether a dismissed teacher would have been from an elementary school or high school. In this regard, I assume that the dismissals had a blanket impact on a certain district’s education system in which higher levels of dismissals impact various school levels and bigger numbers of students.

It is also challenging to find sub-national socio-economic variables, such as GDP, in a country like Turkey with a strict unitary system, which typically does not disclose local-level statistics publicly. Hence, I implemented zonal statistics to extract average nighttime light values from the U.S. Air Force Defense Meteorological Satellite Program’s (DMSP) Operational Linescan System (OLS) (Nechaev et al. 2021) at the district level from 2010 to 2012. For the years from 2013 to 2019, I utilized Earth Observation Group’s (EOG) data from Visible and Infrared Imaging Suite (VIIRS) Day Night Band (DNB) as proposed by Elvidge et al. (2021). Since I used a different dataset after 2013, I calculated z-scores for all the years to ensure standardization across years. I also used TurkStats’ illiteracy rate and school attainment rates from the ABPRS database, population and housing censuses. Using the latter, I calculated the female school attainment rate for all levels of schooling compared to males.

Since a great amount of research on education outcomes focuses on the U.S. context, most of the value-added approaches also consider the racial background of the students. Various studies found that there is a significant gap between white students and black, brown, and Hispanic students, with the former having higher test

²⁷Many online education blogs captured the tables published by the Ministry of Education after the announcement of the threshold scores from the ministry’s temporary websites launched for a short period during the placement process. I have particularly used these for the collection of scores and I used the ministry’s publicly available exam reports for 2018 and 2019 (Sensoy et al. 2019).

²⁸The same model was also estimated using median and lowest-performing schools.

scores particularly due to continued effects of segregation (Card and Rothstein 2007; Kalmijn and Kraaykamp 1996; La Salle et al. 2020; Mickelson, Bottia, and Lambert 2013; Newton et al. 2010; Todd and Wolpin 2007). Although Turkey does not have a history of institutionalized school segregation, it has a strict unitary education system that does not actively integrate different ethnic minority groups, particularly the Kurdish population, who have different mother tongues. Some studies assert that having a Kurdish background or living in a Kurdish majority area may have a negative impact on educational attainments due to adaptation to Turkish as the medium of instruction and higher levels of student per teacher (Aydin and Ozfidan 2014; Kırdar 2009; Oyvat and Tekgüç 2019; Polat and Schallert 2013). As the government does not disclose the ethnic composition of the administrative regions, I have added pro-Kurdish party HDP’s vote share in the 2015 July general elections at the district level as a control variable as well.

3.4.2 Model

In order to test my main hypothesis, I constructed a difference-in-differences model by leveraging the geographical variation in exposure to dismissals of teachers and other ministry personnel to estimate the impact of dismissals on exam scores at the district level. Since the treatment is at the district level, the district-year is the unit of analysis. The district as a unit of analysis has been used in a plethora of education research particularly because it allows a more consistent and stable unit of analysis while allowing the control for possible confounders easier than the schools as units (Blazar and Schueler 2022; Matheny et al. 2023).

Therefore I constructed the following model:

$$(3.1) \quad \text{ExamScore}_{it} = \beta_0 + \beta_1 \text{Dismissal}_{it} + \beta_2 \mathbf{X}_{it} + \alpha_i + \gamma_t + \epsilon_{it}$$

Exam Score is the dependent variable, which is the z-scores of the high school entrance exams conducted from 2013 to 2019. Given that nearly all districts were affected by the dismissals to varying degrees, I created a continuous Dismissal variable to capture the different intensities of the treatment across the units of analysis. Hence, the effect of dismissals is estimated by β_1 . \mathbf{X}_{it} represents the matrix of control variables. The district fixed effects, α_i , control for the unobserved district attributes while the year fixed effects, γ_t , control for year-specific effects common to all districts. District fixed effects also control the likelihood that the government intentionally purged civil servants in a particular location without considering in-

dividual characteristics, simply for the sake of targeting a particular district. ϵ_{it} represents the error term with clustered robust standard errors at the district level.

I also used the same model specification by replacing the continuous dismissal variable with a binary one that takes 1 for the district above the median dismissal rate (1.32) after 2016 and 0 otherwise. Nonetheless, discretizing dismissals is too ad hoc and arbitrary; hence, the models with continuous variables should be trusted more. In any case, I added various demographic and socioeconomic variables—that I could find at the district level such as illiteracy rate, average nighttime light, female school attainment rate, and support for pro-Kurdish parties—to control potential confounders in all models.²⁹ Furthermore, although the Ministry of Education was affected by various KHKs enacted in different periods, my binary variable only changed for a few districts that were treated with later KHKs implemented after the initial shock wave of KHK No. 672.³⁰ Therefore, implementing a staggered difference-in-differences design such as those suggested by Callaway and Sant’Anna (2021) was not necessary for these model specifications.³¹

3.5 Results

As mentioned above while discussing the distribution of dismissals, the first emergency decree, KHK No. 672, has affected the ministry in a higher magnitude. Therefore, I constructed two different model specifications with one considering only the purge occurred with KHK No. 672 and another with the total number of KHKs. I also clustered periods with those from 2013 to 2017 and those including the 2018 and 2019 exams. For instance, Model 1 only includes the dismissals of KHK No. 672 and their impact on the exams between 2013-2017 whereas Model 7 includes the effect of dismissals of all KHKs on exams between 2013-2019. Every specification is estimated using both the binary treatment variable and also the continuous treatment variable.

The effect of the binary treatment variable on exam scores varies across the different models shown in Table 3.2. In Model 1, it is statistically significant with a magni-

²⁹For a reference, balance table of these variables based on the arbitrary threshold can be found in Table B.2.

³⁰13 districts were treated with KHK No. 675, eight districts were treated with 686, two with 695, one with 697, and two with 701.

³¹Even though I tried to implement a staggered design, Callaway and Sant’Anna (2021) estimator did not work because most of the units were already treated in the first period and other groups treated with latter KHKs were too small.

tude of -0.0881 ($p < 0.1$), indicating that being treated with dismissal resulted in a 0.0881 unit decrease in exam scores compared to districts without the treatment. In Model 3, the coefficient is statistically significant at -0.1526 ($p < 0.001$). In Model 5, the treatment effect is statistically significant with a decrease of 0.1088 units ($p < 0.001$). Finally, in Model 7, the binary treatment variable exhibits a statistically significant negative effect of -0.1632 ($p < 0.001$). Furthermore, the continuous Dismissal variable is consistently negative and statistically significant across all models where it is included. The magnitude of this effect ranges from -0.0320 ($p < 0.01$) to -0.0508 ($p < 0.001$), highlighting a robust and significant negative impact on exam scores. For instance, in Model 4, the coefficient is -0.0508, indicating that for each unit increase in dismissals, the exam score decreases by 0.0508 units. Therefore, when dismissals increase by one standard deviation (1.45 units), the exam score is expected to decline by approximately 7.37 percent. Similarly, in Model 6, an increase of one standard deviation in dismissals results in a decrease of approximately 4.64 percent in exam scores.

Table 3.2 Effect of Dismissals on Exam Score (Top Ranking School)

	KHK672 (2013-2017)		KHK672 (2013-2019)		All KHKs (2013-2017)		All KHKs (2013-2019)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dismissal (Binary)	-0.1042*** (0.0280)		-0.1526*** (0.0312)		-0.1088*** (0.0286)		-0.1632*** (0.0316)	
Dismissal (Cont's)		-0.0343** (0.0114)		-0.0508*** (0.0121)		-0.0320** (0.0106)		-0.0448*** (0.0110)
Illiteracy Rate	-0.0548*** (0.0156)	-0.0556*** (0.0154)	-0.0467** (0.0151)	-0.0483** (0.0149)	-0.0545*** (0.0155)	-0.0565*** (0.0155)	-0.0470** (0.0149)	-0.0498*** (0.0148)
Average Nighttime Light	0.7033*** (0.1833)	0.7011*** (0.1830)	0.3603+ (0.1924)	0.3584+ (0.1981)	0.6978*** (0.1840)	0.6975*** (0.1827)	0.3531+ (0.1908)	0.3571+ (0.1977)
Female School Attainment Rate	-5.2929 (3.8796)	-5.2377 (3.8960)	-0.0726 (3.5624)	-0.0530 (3.5966)	-5.3907 (3.8814)	-5.4210 (3.8802)	-0.1782 (3.5557)	-0.2422 (3.5686)
Kurdish Vote	-0.7234 (0.9144)	-0.7234 (0.9162)	-0.3162 (0.9307)	-0.3302 (0.9380)	-0.7177 (0.9147)	-0.6904 (0.9198)	-0.3060 (0.9302)	-0.2821 (0.9422)
Num.Obs.	5808	5808	6884	6884	5808	5808	6884	6884
R2	0.911	0.911	0.822	0.822	0.911	0.911	0.822	0.822
Std.Errors	by: District	by: District	by: District	by: District	by: District	by: District	by: District	by: District
FE: District	X	X	X	X	X	X	X	X
FE: Year	X	X	X	X	X	X	X	X

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

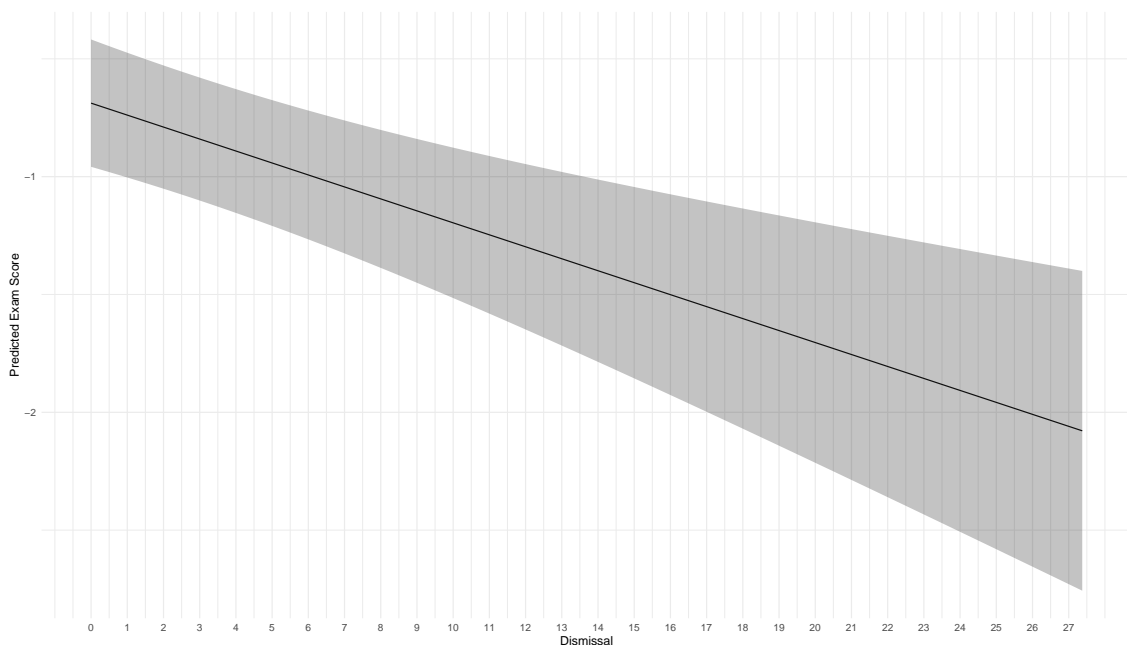
The unit of observation is district-year. Standard errors are robust and clustered by districts.

As I have two different periods, one with more yearly observations for districts, another crucial point is the long-term impacts of the dismissals. As can be seen from the results, particularly for the continuous dismissal variable, the effect of dismissals is more pronounced in the long term in the models including the exams after 2017. While the first wave of dismissals resulted in a 4.48 percent decrease in exam scores during 2013-2017, the same impact is a 7.37 percent decrease when the exams conducted in 2018 and 2019 are included. For the overall impact of the dismissals, while the decrease is 4.64 percent for the exams before 2018, it is 6.49 percent for the later exams. Hence, one can infer that the dismissals also have a long-term effect on students' performance, which may derive from the overall decrease in the quality of the education system and the government's failure to cope with the

deepening underlying problems caused by the dismissals.

Figure 3.7 demonstrates the predicted exam score as a function of dismissals, based on Model 4, which estimates the impact of KHK No. 672 on all exams. Control variables are set to their mean values. The slope of the line is -0.0508, indicating that for each unit increase in dismissals, the exam score decreases by 0.0508 units. Due to the presence of outliers in the dismissals data, the standard errors increase as the dismissal rate rises since there are very few observations with more than seven dismissals per 1,000 people. Going from no dismissal to the maximum number of dismissals (27 per 1,000 people in Karaburun district) causes the exam scores to decrease by more than 200 percent according to Model 4's prediction.

Figure 3.7 The Impact of Dismissals on Exam Scores, Based on Predictions in Model 4



In Appendix B, I estimated the same models using median-ranked and lowest-ranked schools' scores as well. For median-ranking scores, the binary treatment variable consistently shows a significant negative effect on exam scores across multiple specifications, with magnitudes ranging from -0.1422 ($p < 0.01$) to -0.3047 ($p < 0.001$). The continuous dismissal rate also demonstrates a strong, consistently significant negative impact on exam scores, with magnitudes ranging from -0.0513 ($p < 0.001$) to -0.1112 ($p < 0.001$). For lowest-ranking scores, the binary treatment variable does not yield statistically significant results. However, the continuous dismissal consistently shows a significant negative effect, with magnitudes ranging from -0.0486 ($p < 0.05$) to -0.0629 ($p < 0.01$), indicating a negative impact on exam scores post-2016, except for one model specification. Overall, results for the median-ranking

schools indicate that a one standard deviation increase in dismissals leads to a decrease in exam scores ranging from 7.44 percent to 16.12 percent, depending on the specific model used. For the lowest-ranking schools, the same decline ranges from 7.05 percent to 9.12 percent.

I believe the driving forces behind these results stem from the aforementioned literature on value-added approaches. Firstly, as noted by many prominent teacher unions in the country, the sudden decrease in the number of teachers and the government's unconventional alternatives to solving the problem have led to worsening academic performance for students who have become increasingly dependent on teachers in the absence of external preparatory programs despite the continuation of the centralized exam system. The government's solution of dismissing nearly 30,000 public teachers and suspending many others at the beginning of a school year merely involved enacting a contract-based teacher recruitment system and shuffling surplus teachers (Dursun 2016; Öztürk 2016). However, while even the pro-government unions emphasized the small likelihood of nationwide teacher mobility to address the shortage (Çelik et al. 2017, 140), leftist unions criticized the solution's susceptibility to patronage-based recruitment of inexperienced teachers (Eğitim-Sen 2016).

Even if contracted teachers were assumed to have no patronage ties, several prominent scholars have maintained that teachers' qualifications, from their degrees to their preparedness for school, affect students' overall performance on test scores. In his interview, the then-undersecretary of the Ministry of Education stated that contracted teachers would be recruited for a period resembling a trial and would become permanent teachers approximately five years later (Dursun 2016). Nonetheless, newly graduated teachers have been increasingly recruited by the ministry as contracted employees, placing them in an extremely precarious situation, which would negatively impact student performance as well (Clotfelter, Ladd, and Vigdor 2007).

As a further note, one can speculate that the teachers could have left the districts after their dismissals with their families, which may have also resulted in the loss of teachers' children from the respective district. As parents, teachers may have a "doubled" impact on their children's academic achievements as parental involvement has been shown to be a strong indicator of success (Fan 2001; Fan and Chen 2001; Ladd, Herald, and Kochel 2006). This phenomenon can also be extended to high-achieving students, as they may have moved out of districts heavily affected by the dismissals. These students might have opted for districts with somewhat functioning education systems to secure their future in a more stable environment. Additionally, it is known that Gulenists have stolen exam questions to place their members in

esteemed schools and state departments for a long time (Önen 2022). Losing these resources may have also affected overall academic performance, yet it should be noted that the likelihood of this after 2013 was smaller than in previous years as the AKP began to cut their channels of infiltration around that time.

These results are also consistent with the abovementioned literature indicating that the state's ability to provide services may have been improved by past political appointments and that exogenous shocks, such as high turnover following an election, would also impact the positive impact of these pre-existing networks (Brierley 2021; Jiang 2018; Toral 2024). As Toral (2024, 814) asserts, while patronage bureaucrats can be easily perceived as a means of corruption, they could also serve as agents who use their ties to overcome serious issues emerging from development problems and lack of well-established institutions. As Gulenists were a crucial ally of the AKP government with a modus operandi of infiltrating every level of state cadres, it is evident that these purges were not just a public spectacle by AKP but a serious attempt to cut down the resource and recruitment pool of its former partner in the winning coalition. It is important to acknowledge that the purged Gulenist employees were not merely conspirators but also figures whose existence was intertwined with the survival of the AKP, thus the government, for a long time (Brierley et al. 2023; Svolik 2009). Hence, losing patronage employees could also lead to the disruption of public service provisions at least until they are replaced with new and prepared cadres.

4. MINISTRY OF INTERIOR

4.1 Introduction

The Ministry of Interior stands out as the state institution most affected by the purge with more than 40,000 dismissals, about 31 percent of the total. While several civil departments such as the Directorate General of Civil Registration and Citizenship Affairs, Governor's Offices, or municipalities are within its jurisdiction, the ministry also administers armed general law enforcement agencies including the General Directorate of Security, Gendarmerie General Command, and Coast Guard Command. The latter two were put under the control of the ministry days after the coup attempt; hence, they were included as part of this research.

This chapter of the thesis focuses on the police officers dismissed with KHK No. 670 on August 17, 2016, which resulted in the dismissal of 2,360 senior police chiefs and officers from their posts in every province of the country. While there are several other decrees with dismissals from the General Directorate of Security, none of them contain information on the respective provinces of police officers and only list their ranks. Unlike others, KHK No. 670—the first wave of dismissals affecting the police officers—includes information on the provinces of dismissed police officers but does not specify their districts.

The dismissals of police officers can lead us to a new path to investigate two hypotheses, particularly regarding the discussions on defunding the police departments: (I) shrinking number of police officers does not cause crime rates to increase or (II) the decreasing number of police officers result in higher crime rates. More importantly, the setting can address the underlying endogeneity problem present in previous studies, where an increase in the number of police forces might both reduce crime and be a response to higher crime rates by the authorities (Di Tella and Schargrodsky 2004; Kovandzic et al. 2016). As a purge is an unprecedented exogenous shock on state departments, a proper model specification allows us to go beyond the endogeneity

problem.

This chapter begins with a review of previous literature on the relationship between law enforcement officers and crime rates, highlighting the methodological challenges researchers have encountered. Based on this literature, I argue that decreasing police numbers due to purges would lead to an increase in crime rates, as the increased capacity of police departments has consistently been found to have a positive impact on reducing crime rates. In the following sections, I closely examine the dismissals affecting police officers and their geographical variation, explain my variables, and describe the difference-in-differences model I constructed, similar to the approach in the previous chapter, to test my hypothesis. Finally, I do not find sufficient evidence to reject the null hypothesis and discuss possible limitations of the research design.

4.2 Police Officers' Impact on Crime Rates

While crime statistics are among the most accessible data sources, there has not been a consensus on the potential predictive variables, especially in models estimating the impact of the criminal justice system on crime rates (Bun et al. 2020). Firstly, the extensive use of aggregated crime data raised concerns about reverse causality, complicating efforts to track the impact of law enforcement institutions on crime rates (Bun et al. 2020; Sherman 1992). While some unobserved exogenous effects could increase the crime rates, they can at the same time exhaust the police resources (Bun et al. 2020) or lead to an increase in the policing or recruitment of more police officers (Di Tella and Schargrodsky 2004; Kovandzic et al. 2016; Levitt 2002). Therefore, most of the studies using deterrence factors, such as the availability of police numbers on duty, suffer from a high probability of endogeneity (Bun et al. 2020, 2307).

Since the earlier studies, a strong police presence, proxied by the resources available to police units and the visibility of police officers through arrests or patrols, has been found to negatively impact crime rates (Thaler 1977; Wilson and Boland 1978). To address the aforementioned methodological challenges, Levitt (1995) leverages election cycles, during which the number of police officers increases dramatically, and finds that this phenomenon particularly reduces violent crimes and has a smaller negative impact on crimes against property. However, Kovandzic et al. (2016) asserted that Levitt's initial estimations suffered from weak instrumental variables and were therefore not suitable for dealing with potential endogeneity even though Levitt (2002) revisited his findings and found similar results. Di Tella and Schar-

grotsky (2004), on the other hand, utilized a terrorist attack that led to increased police protection for Jewish institutions around Buenos Aires. The authors found that this exogenous shock, which resulted in increased police presence, had a negative effect on the prevalence of property crimes. This negative relationship between crime rates and increased police presence and capacity has been observed by several other studies in various settings (Corman and Mocan 2005; Lin 2009; Mello 2019).

With the dramatic rise of the Black Lives Matter (BLM) movement in the U.S. after the murder of George Floyd by a police officer in 2020, a new research path also emerged with the increasing discussions on “defunding the police” (Hoang and Benjamin 2024; Lum, Koper, and Wu 2022; Skoy 2021). The evidence shows that governing bodies have not implemented the demands of protestors to reduce the budget of police departments and allocate resources to different organizations that can replace some of the responsibilities of the police force (Ebbinghaus, Bailey, and Rubel Forthcoming; Hoang and Benjamin 2024). Lum, Koper, and Wu (2022) are also skeptical about the possibility of defunding as they argue that allocating tasks of the police forces to different institutions to decrease their presence requires “significant resource expenditures and adjustments.”

In light of the previous literature, I found the Turkish government’s purge of police officers to be an instrumental event for testing previous hypotheses without the danger of methodological challenges, as it constitutes an exogenous shock that caused the presence of police forces to decrease. In light of the aforementioned literature on adverse effects of bureaucratic turnover, I believe a sudden decrease in the capacity of the police forces would have adverse effects on policing:

H₂ : Dismissal of police officers increases crime rates.

4.3 Dismissals in the Ministry of Interior

In 2021, then-Interior Minister Süleyman Soyly announced that the government recruited a total of 124,327 new personnel to the police force, including 15,627 deputy inspectors, 80,979 police officers, and 27,721 neighborhood watchmen following the coup attempt on July 15, 2016, (Bulur 2021). The new recruits constituted 40 percent of the total police personnel, which was 310,919 in 2021, according to the former minister. The number of police personnel fluctuated over the years as the minister mentioned. It was 257,503 in 2015, declined to 250,738 in 2016, rose to 260,226 in 2017, increased further to 267,814 in 2018, and reached 286,473 in 2019

(TurkStat 2022, 116).

While Table 4.1 shows every KHK and how many public employees were dismissed as a result of it from the Ministry of Interior, Table 4.2 shows only those who were part of the armed general law enforcement agencies. The police officers were the largest group in numbers, with 16,837 dismissed personnel, whereas 4,096 gendarmerie and 354 coast guards were dismissed in total.

Table 4.1 Number of Dismissals in the Ministry of Interior per KHK

KHK No	Date	Dismissal No
669	July 31, 2016	1,187
670	August 17, 2016	2,384
672	September 1, 2016	8,404
675	October 29, 2016	2
677	November 22, 2016	10,685
679	January 6, 2017	2,690
683	January 23, 2017	157
686	February 7, 2017	1,362
689	April 29, 2017	184
692	July 14, 2017	4,066
693	August 25, 2017	215
695	December 24, 2017	604
701	July 8, 2018	9,923

However, these numbers do not show the real magnitude of the dismissals in the police departments. As mentioned in Chapter 2, the exposed rift between the Gulenists and the AKP at the end of 2013 prompted a strong response from the AKP, resulting in the reshuffling of thousands of police officers who were considered to be part of the Gulenist network, as well as the dismissal of several senior-ranking officers. In 2018, the government added an amendment to an old decree law (KHK No. 375 from 1989) that allowed for the dismissal of police officers and other public employees if they were suspected of “having connections to terrorist organizations threatening national security.” The Ministry of Interior frequently utilized this decree after the end of the emergency rule to continue dismissing police officers until the Constitutional Court intervened in 2022. However, official lists of these dismissals were not publicly released in the Official Gazette as it was done during the emergency rule. Thus, while other ministries were also affected by these additional measures outside the KHKs, the impact on the police department was particularly higher and remains unmeasurable.

While there have been no certain statistics about the dismissals enacted through this authorization, in 2022, the General Directorate of Security made the following statement:

Table 4.2 Number of Dismissals Affecting Security Officers per KHK

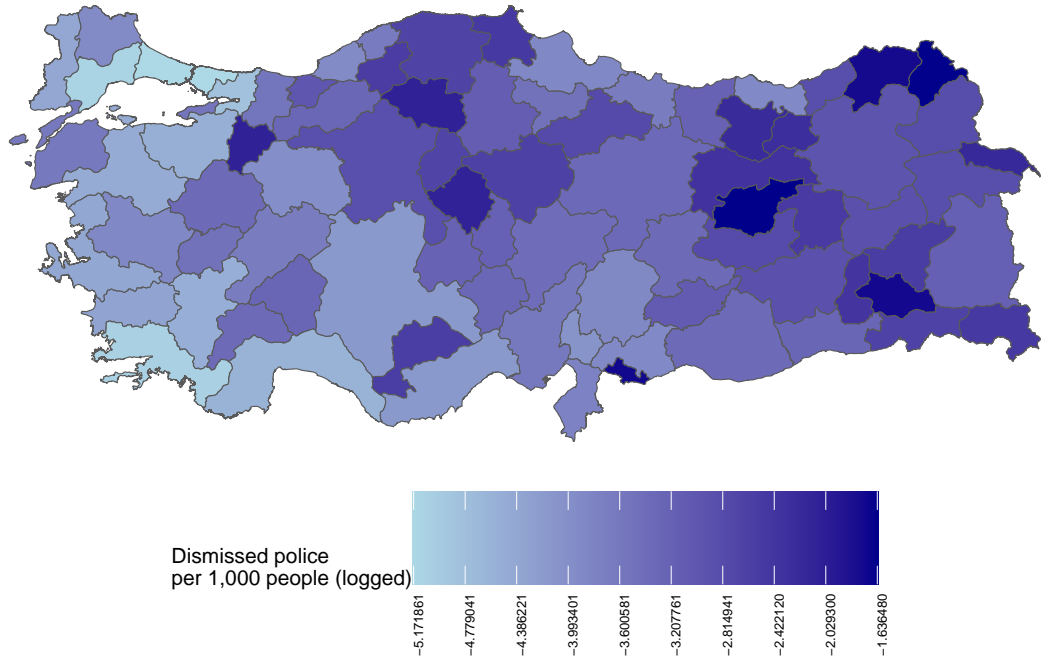
KHK No	Date	Departments		
		Directorate of Security	Gendarmerie General Command	Coast Guard Command
669	July 31, 2016		1,187	
670	August 17, 2016	2,360		24
672	September 1, 2016		323	2
675	October 29, 2016			2
677	November 22, 2016		403	
679	January 6, 2017	2,686		4
686	February 7, 2017	417	893	3
689	April 29, 2017		56	120
692	July 14, 2017	2,303	235	
693	August 25, 2017	12		3
695	December 24, 2017	61	350	4
701	July 8, 2018	8,998	649	192
Total	2016 - 2018	16,837	4,096	354

Prior to the coup attempt, our personnel count was 273,000, which initially decreased to around 239,000 after the dismissal of 34,636 individuals. During the investigation period, with those suspended from duty, the count fell below 230,000. To ensure no compromise in public peace and security due to personnel shortages, all our personnel continued their duties with great dedication, without regard to regular working hours, until the gaps were filled through new recruitments and training. (General Directorate of Security 2022)

In this sense, the dismissals accounted for at least 43,000 personnel in the police force, which constituted nearly 16 percent of the total staff before the coup attempt. Therefore, it is reasonable to conclude that the magnitude of dismissals within the police department was greater than those documented in the main purge data.

Using the existing information, I have created a similar distribution data for the purged police officers as I did for the Ministry of Education. I used the province's population to estimate the impact of dismissals per 1,000 people and conducted a log transformation, aiming for a more standardized distribution. Figure 4.1 demonstrates the distribution of dismissed police officers in Turkey's 81 provinces. In contrast to the distribution of dismissed teachers, the Eastern Anatolian and Eastern Black Sea provinces exhibit higher levels of shock whereas the Western part demonstrates a lower density. Eastern Tunceli (0.194); Southeastern Kilis (0.175) and Siirt (0.173), and Ardahan (0.193) and Artvin (0.172) in the Eastern Black Sea have the highest levels of dismissals per 1,000 people. On the other hand, İstanbul (0.0056), Tekirdağ (0.0061), Muğla (0.0064), Kocaeli (0.0081), and Antalya (0.0103) have the lowest density of dismissals.

Figure 4.1 Standardized Count of Dismissed Police Officers (KHK670)



4.4 Data and Research Design

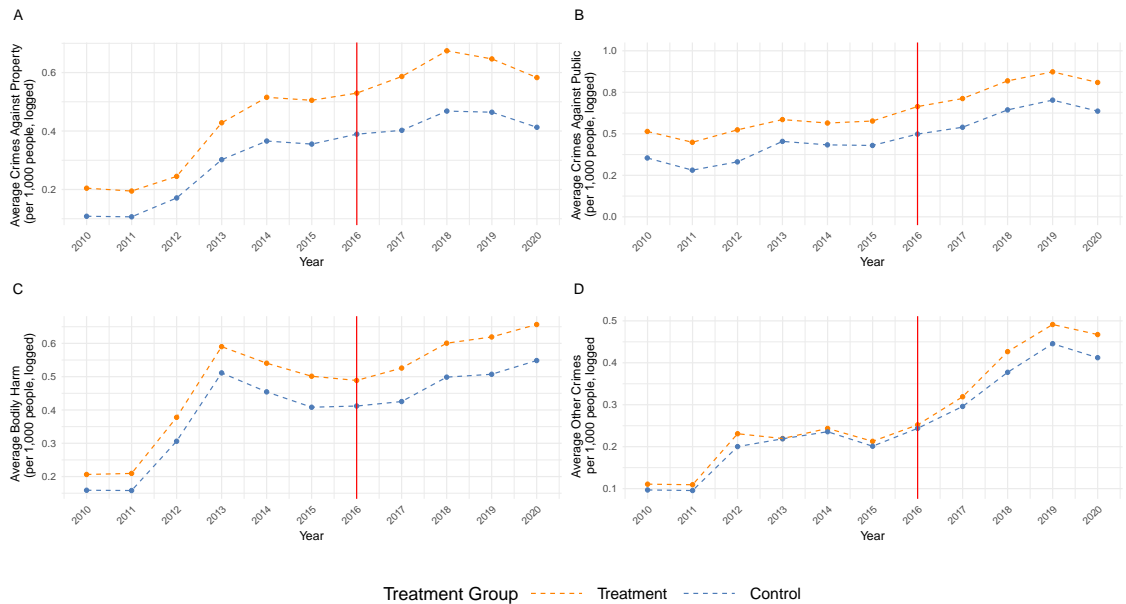
4.4.1 Data

For my dependent variable, I used TurkStat statistics on “Convicts Received Into Prison by Type of Crime at the Time of Committed Crime (NUTS-3)” to create a crime rate variable at the province level using total crime numbers from 2010 to 2020 (TurkStat 2021). I created a standardized version of it by calculating crimes per 1,000 people. TurkStat also has 25 subcategories for crimes varying from non-violent to violent acts. I have employed conceptualization of Akdeniz (2020) based on the Turkish Penal Code using seminal work of Warr (1989) in order to create more exhaustive categories to cluster the same types of crimes. In this regard, I have assembled crimes against the property in Cluster 1, crimes against the public in Cluster 2, and crimes against bodily integrity in Cluster 3. The other and unknown subcategories merged on one cluster as Other. A more detailed description of these clusters can be found in Table 4.3. These four additional categories were also employed as dependent variables along with the total crime rate. The average rates of these clusters can be found in Figure 4.2.

Table 4.3 Clusters and Crimes

Cluster	Crimes
Property (1)	Swindling, Violation of cheque law, Theft, Robbery&Extortion, Embezzlement, Damage to property, Forgery, Smuggling
Public (2)	Acting contrary to the measures for family protection, Opposition to the military criminal law, Bribery, Threat, Production and commerce of drugs, Use and purchase of drugs, Defamation, Opposition to the bankruptcy and enforcement law, Forestry crimes, Traffic crimes, Prevention of duty
Bodily Harm (3)	Crimes related to firearms and knives, Sexual crimes, Bad treatment, Assault, Homicide, Kidnapping
Other (4)	Other crimes, Unknown

Figure 4.2 Average Crime Rates per Different Clusters for Treatment and Control Groups



As a control variable, I once again utilized the nighttime light data to extract province-level averages transformed into their z-scores (Elvidge et al. 2021; Nechaev et al. 2021). Additionally, I used TurkStat’s province-level data on GDP per capita (in USD and Current Prices), the number of doctors per 1,000 inhabitants, the illiteracy rate, and the use of public libraries per 1,000 inhabitants from the ABPRS database. All of the variables are on the province level.

4.4.2 Model

I constructed a difference-in-differences model by leveraging the geographical variation in exposure to dismissals of police officers to estimate the impact of dismissals on crime rates at the province level. The unit of analysis is province-year. As all the provinces were affected by the dismissals at different levels, I first created a binary Dismissal variable to indicate whether a province was affected by the dismissals by coding the ones above the median level of the dismissals (0.04) after 2016 as 1 and 0 otherwise, which was an arbitrary threshold.

Therefore my model is,

$$(4.1) \quad \text{CrimeRate}_{pt} = \beta_0 + \beta_1 \text{Dismissal}_{pt} + \beta_2 X_{pt} + \alpha_p + \gamma_t + \epsilon_{pt}$$

where Crime Rate is the main dependent variable which is the logged version of the normalized crime rates (both total crime rate and different crime clusters), Dismissal is the main independent variable. X_{pt} represents the matrix of control variables, α_p represents the province fixed effect controlling the constant unobservant attributes of each province; γ_t represents the year fixed effects controlling the unobservant effect of each year; and ϵ_{pt} represents the error term with clustered robust standard errors at the province level.

In addition, I estimated the same model with a continuous dismissal variable, using a dummy post-2016 variable to differentiate between the pre-treatment and post-treatment periods. In this model specification, the magnitude of dismissals is also crucial for estimating the impact, as it reduces the information loss associated with the binary variable and tests the model without an arbitrary threshold.

4.5 Results

The regression models in Table 4.4 present the effect of dismissals on different types of crime rates along with the total crime. There is a significant reduction in property crime rates when the model is estimated with the binary dismissal variable, with a coefficient of -0.0578 ($p < 0.001$). This impact pronounced itself in a greater magnitude when the model is estimated with the continuous dismissal variable, with a coefficient of -0.6048 ($p < 0.05$). In other words, when the dismissals increase by one standard deviation (0.20 units), property crime is expected to decrease by approximately 12.1 percent. Furthermore, the dismissals resulted in a statistically significant decrease in bodily harm crime rates in treated provinces, with a coefficient of -0.0209 ($p < 0.1$) when estimated with the binary treatment variable, yet there is no statistically significant impact with the continuous variable.

Moreover, the coefficients for other crime categories (overall crime rate, public crime, and other crimes) are not statistically significant, suggesting no notable impact of dismissals in these areas. Hence, we cannot reject the null hypothesis and I did not find evidence on whether the dismissals increased the crime rates or not.

Table 4.4 Effect of Dismissals on Crime Rates

	Total Crime Rate		Property		Public		Bodily Harm		Other	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dismissal (Cont's)		0.5525 (0.4427)		-0.6048* (0.2551)		0.2550 (0.2658)		-0.1622 (0.1156)		-0.0003 (0.2883)
Dismissal (Binary)	0.0015 (0.0409)		-0.0578*** (0.0148)		-0.0188 (0.0220)		-0.0209* (0.0102)		-0.0262 (0.0180)	
Average Nighttime Light	0.0093 (0.0110)	0.0091 (0.0110)	0.0013 (0.0040)	0.0015 (0.0040)	-0.0046 (0.0047)	-0.0047 (0.0047)	0.0041 (0.0028)	0.0041 (0.0028)	0.0021 (0.0019)	0.0021 (0.0020)
GDP per capita (\$)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Doctor per 1,000 People	-0.0277 (0.1145)	-0.0461 (0.1128)	0.0295 (0.0385)	0.0445 (0.0377)	0.0532 (0.0695)	0.0430 (0.0658)	0.0427+ (0.0244)	0.0462+ (0.0260)	0.0422 (0.0306)	0.0398 (0.0286)
Illiteracy rate	-0.0628* (0.0264)	-0.0575* (0.0261)	0.0105+ (0.0055)	0.0130* (0.0052)	-0.0072 (0.0130)	-0.0019 (0.0132)	0.0169** (0.0056)	0.0183*** (0.0053)	0.0038 (0.0050)	0.0076 (0.0050)
Use of Public Libraries per 1,000 people	0.0000 (0.0001)	0.0000 (0.0001)	0.0001* (0.0000)	0.0001* (0.0000)	0.0001 (0.0000)	0.0001 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
DV mean	0.66	0.66	0.40	0.40	0.57	0.57	0.44	0.44	0.27	0.27
Num.Obs.	891	891	891	891	891	891	891	891	891	891
R2	0.922	0.923	0.931	0.930	0.867	0.867	0.927	0.926	0.845	0.844
Std.Errors										
FE: Province	by: Province X	by: Province X	by: Province X	by: Province X	by: Province X	by: Province X	by: Province X	by: Province X	by: Province X	by: Province X
FE: Year	X	X	X	X	X	X	X	X	X	X

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The unit of observation is province-year. Standard errors are robust and clustered by provinces.

One particular drawback of this analysis is that the Ministry of Interior changed its transparency level of the dismissal announcements after KHK No. 670. While the government has continued to purge high numbers of personnel from the General Directorate of Security, it did not share their provinces on the official gazette lists. Moreover, we do not have publicly available data on the dismissed personnel outside of these procedures even though the ministry's data demonstrated that the real magnitude of the purge was higher. Therefore, I was only able to use the initial shockwave of the dismissals to estimate their impact on the crime rates, which was

not the most ideal but most accessible sample. Even though the initial wave of dismissals yielded statistically significant results in the Ministry of Education, it was not the best instrument in this setting. Further testing could be possible with a bigger sample ranging over a long period.

Additionally, the internal dynamics of the ministry may have also mitigated the impact of the purges. As indicated above, the AKP realized as early as 2012 and 2013 that the Gulenists were prepared to use their extensive bureaucratic cadres in the criminal justice system against them. Consequently, the government had already begun “coup-proofing” steps within the Ministry of Interior before 2016, potentially lessening the impact of the purges. Dominant groups within a winning coalition often keep potential rivals close for easier monitoring (Gandhi and Przeworski 2007). Constrained by institutional barriers and the legislative branch to orchestrate mass dismissals before the emergency rule, the AKP may have used available means, such as mass reshufflings, to reduce the Gulenists’ influence in the security ranks, posing a significant threat to the latter’s survival. I wonder if we had geospatial data on the reshuffling of police officers, would it coincide with the data on the first wave of police dismissals or have a negative correlation with the data on dismissed teachers if we argue that the first waves of purges against teachers were particularly towards Gulenists’ strongholds. Hence, would they be reassigned to areas without a strong presence of Gulenists to decrease their strength? Also, if rival factions opposed to the Gulenists filled crucial ranks in the police departments, the AKP could have benefited from this internal rivalry within the winning coalition before the coup attempt, minimizing the impact of the purges afterward.³² Therefore, the purge’s impact on public service provision can also be influenced by the internal dynamics of an institution and the visibility of the rival faction before the most costly options emerge both for the coup plotters and the surviving faction.

³² Although students of Turkish politics would be aware that the AKP consists of various factions, including different religious orders that sometimes conflict with each other for key positions, research on this topic is very scarce. For some discussions on the AKP’s intra-party dynamics, one can refer to Gumuscu (2020a; 2020b) and Esen and Yavuzilmaz (2023).

5. CONCLUSION

A significant portion of the previous literature on purges has focused on understanding their role in authoritarian power consolidation, explicitly using those targeting elites around the central leader or group (Li and Manion 2023; Montagnes and Wolton 2019; Svulik 2009). However, it is evident that autocrats also use their administrative power to reorganize state cadres when a challenge arises from within the winning coalition, threatening the survival of their ruling coalition (Bokobza et al. 2022; Kroeger 2020; Woldense 2022). In this regard, mass bureaucratic purges are instrumental tools for authoritarian leaders to attack the support base of the former allies who rise against them, given that a high proportion of authoritarian settings rely on patronage recruitments (Brierley 2021). Leveraging their extensive previous knowledge of their coalition partners, they can effectively target their “new opponents” by undermining their grassroots members and cutting off their access to state resources (Acemoglu, Egorov, and Sonin 2008; Aidt, Lacroix, and Meon 2022; Montagnes and Wolton 2019; Sudduth 2017; Svulik 2009). Thus, focusing solely on purges targeting senior bureaucrats would not provide a comprehensive understanding of a purge’s impact on state capacity (Bueno de Mesquita and Smith 2016).

A broad literature has already sought to understand why purges occur, drawing on empirical findings from events such as Stalin’s Great Purge and Mao’s Cultural Revolution (Montagnes and Wolton 2019). An emerging body of research, however, focuses on the importance of state cadres for public service delivery and investigates the effects of mass purges on societal outcomes (He and Wu 2023; Saijo 2023). Given that the state’s capacity to provide services may be enhanced by the patronage ties between high-ranking and street-level bureaucrats, an exogenous shock such as a mass purge targeting a specific group of personnel or bureaucratic turnover after a lost election can disrupt these pre-existing networks facilitating day-to-day jobs, thereby hindering public service provision, particularly in developing bureaucratic regimes with low institutionalization (Brierley 2021; Jiang 2018; Toral 2024).

Additionally, the constant threat of purges can alter bureaucratic behavior and bureaucrats' approach to their roles as state employees, further affecting patterns of public service provision (He and Wu 2023).

In a relatively untouched empirical setting, I examined Turkey's purges of 2016-2018 following a failed coup attempt by the government's former ally in this thesis. To the best of my knowledge, there has not been any attempt to understand the impact of the dismissals, which targeted nearly 130,000 public employees, except for Bozcaga and Christia (2020) who found that low state capacity does not result in the expansion of the Gulenists networks.

In my study, I first utilized novel administrative data I collected, based on the publication of decree laws containing information on every purged public employee, to analyze the spatial distribution of dismissals. I discovered that initial dismissals were concentrated in Central Anatolian and Inner Aegean provinces, showing little variation even among their districts. In contrast, provinces in Thrace, the Mediterranean coastal region, and Eastern Anatolia experienced relatively lower intensity of purges. It's important to note that these regions historically exhibited lower support for the ruling AKP since 2002. However, provinces in eastern Turkey, predominantly populated by the marginalized Kurdish population, began to experience more intense purges, especially with later decrees. While my study cannot empirically determine the exact targets of the government due to the lack of reasons provided for dismissals, these findings align with reports from political parties and non-governmental organizations suggesting that KHKs were used to target political dissidents, particularly Kurds, with the consolidation of the emergency rule "regime" (Altıok 2018; IHOP 2018; Salman 2020; Öndül 2022).

Circling back to my original question inquiring about the impact of purges on public service provision, I also examined the purges in the Ministry of National Education and the Ministry of Interior to test their impact on public service provision. Firstly, to capture the effect of the dismissal of tens of thousands of teachers nationwide on students' performance in standardized high school entrance exams, I employed a value-added approach with a difference-in-differences model, leveraging the geographical differences in exposure to dismissals. I found a negative impact of the dismissals on students' exam performance, resulting in a decrease of 4.64 to 7.37 percent in exam scores in various specifications. These findings are indeed in line with the previous studies that find a negative impact of high bureaucratic turnover after an exogenous shock on the state cadres, especially when civil servants are highly embedded with politicians (Brierley 2021; He and Wu 2023; Saijo 2023; Toral 2024). I believe the impact of the purges has aggregated with the replacement recruitments

using reshuffling the surplus teachers or employing contracted teachers since a vast literature asserted that teachers' qualifications such as experience or preparedness have a positive impact on student test scores (Banerjee et al. 2007; Clotfelter, Ladd, and Vigdor 2009; Darling-Hammond 2000; Glewwe, Ilias, and Kremer 2010; Matheny et al. 2023; Miller, Murnane, and Willett 2008).

Despite having a relatively smaller sample of dismissals in the police department compared to the Ministry of Education, I aimed to leverage this exogenous shock to explore its potential effects. Previous studies on the criminal justice system have faced various methodological challenges in estimating the impact of police presence and size on crime rates, often leading to significant endogeneity issues. While some unobserved external factors can increase crime rates, they can also deplete police resources (Bun et al. 2020) or prompt increased policing efforts and the employment of more officers (Di Tella and Schargrodsky 2004; Kovandzic et al. 2016; Levitt 2002). Consequently, many researchers seek exogenous shocks to assess the impact of fluctuating police numbers on crime rates (Di Tella and Schargrodsky 2004; Levitt 2002). In this context, I believe the purging of police officers offers a valuable empirical setting to test these hypotheses. However, when applying the same model used to estimate the impact of teacher dismissals on police dismissals, I did not find substantial evidence on whether there has been a change in crime rates and if it is in which direction. The model only showed a significant and negative impact on property crimes and crimes against bodily integrity in one specification, indicating that a one-unit increase in dismissals is associated with a 12.1 percent decrease in property crimes when dismissals increased by one standard deviation.

One technical limitation I encountered in my research is the Turkish government's non-disclosure of district or province-level personnel data, which would be more suitable for creating a standardized count of dismissals. Such data would also facilitate further research into estimating the impact of purges on specific institutions at various administrative levels. Additionally, in my study on the Ministry of Education, I utilized median, top, and lowest high school threshold scores in specific districts, even though the smallest unit for exam scores is at the school level, potentially introducing representation bias. I faced several challenges in constructing longitudinal data by matching threshold scores across time, despite employing probabilistic models designed for merging administrative data, including methods proposed by Enamorado, Fifield, and Imai (2019). A significant issue was the frequent renaming of schools due to closures, mergers, or renaming after influential figures such as local martyrs or philanthropists. Therefore, while a more fine-grained analysis would be feasible with school-level data, the lack of information on the specific schools of dismissed teachers limits this approach as well.

A notable limitation in the analysis of police officers is the sample size as the model was only tested using the dismissals that occurred during the first wave of the purges. Future research could explore the same hypothesis using dismissed gendarmerie officers who have unit-level geospatial information on their positions. However, their jurisdiction primarily covers peripheral areas distinct from police forces, necessitating the identification of suitable outcome variables.

Although a significant part of this thesis includes various visualizations of the purges for the discovery of geospatial trends, clearly showing some degree of regional clustering, the question of why purges were distributed in such a way still requires further exploration. During my literature review on the Gulenists, I encountered some studies suggesting that the power and presence of the Directorate of Religious Affairs have been increasing especially since the rift between the AKP and the Gulenists (Dogan 2020; Fabbe and Balıkcıoğlu 2022; Öztürk 2018). As one of the Turkish Republic's oldest institutions, the directorate was initially established to manage radical Islamist mobilization and maintain centralized control over religious institutions with a basis on the Hanafi school of Sunni Islam (Ulutas 2010). However, it did not possess its current capacity when the Gulenists' influence within the state was at its peak (Fabbe and Balıkcıoğlu 2022; Öztürk 2018). With the conflict within the winning coalition, the Directorate, like many other state departments, became a site of contestation (Fabbe 2021). The Directorate of Religious Affairs now had a budget exceeding that of most ministries with an ever-increasing staff and branches (Adak 2021), contrary to its relatively moderate condition during the Gulenists' dominance in state cadres. Therefore, understanding the rise of the Directorate could provide valuable insights into the former strongholds of the Gulenists along with their demographic and political characteristics.

Lastly, further examination is needed to understand the Kurdish population's relationship with the Gulenists. The initial waves of the KHKs, which I assume disproportionately targeted known members of the Gulenists, showed a negative correlation with Kurdish-majority administrative regions and constituencies with higher support for the Kurdish political movement. Therefore, it might be interesting to see the story of the Gulenists' rise and fall from the Kurdish political movements' lenses to understand the regional dynamics that might hinder the growth of the Gulenists in these areas.

Throughout this research, my primary aim was to leverage the significant exogenous shock created by a bureaucratic purge as an opportunity to test established and emerging theories in public service provision, thereby enhancing the potential for higher external validity due to the nature of the setting and treatment (Findley,

Kikuta, and Denly 2021). Firstly, I sought to utilize hypotheses regarding the impact of bureaucratic turnover on state capacity by examining a pure shock affecting all state cadres rather than focusing on losing patronage networks—which is very difficult to measure—or purging a small group of political elites. Furthermore, as in my analysis of purged teachers, I aimed to leverage the purge context to extend beyond the limited samples and time frames of previous research, or like in the case of purged police officers, addressing the inherent methodological problems of the setting. Consequently, I believe that understanding the impact of the purge in Turkey not only transports previous literature’s inferences but also paves new ways to comprehend bureaucratic apparatus and its importance for state capacity.

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APPENDIX A

Figure A.1 A Screenshot from Original Document of the KHK No. 672

SOSYAL GÜVENLİK KURUMU BAŞKANLIĞI						
SN	SICİL NO	ADI SOYADI	UNVAN	ÇALIŞTIĞI BİRİM	İL / İLÇE	
337	89939	AYTEKİN YILMAZ	ŞEF	İZMİR SGİM	İZMİR / MERKEZ	
338	102490	ENİS ESER	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
339	122394	HARUN ÇİFTÇİ	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
340	61878	MAHMUT KUŞ	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
341	309831	MEHMET ÇANKURT	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
342	115747	MEHMET ENVER BİLİNİŞ	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
343	121850	MEVLÜT BAĞAR	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
344	408887	MUSTAFA KAHRİMAN	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
345	138506	SÜMEYRA ÖZTÜRK	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
346	207370	TÜRKAN KUMRUOĞLU	VHKİ	İZMİR SGİM	İZMİR / MERKEZ	
347	407936	ÖLKÜ GÜNDÜZ	MEMUR	İZMİR SGİM	İZMİR / MERKEZ	
348	407918	YASİN AKEL	SOSYAL GÜVENLİK DENETMEN YARDIMCISI	İZMİR SGİM	İZMİR / MERKEZ	
349	122556	SONGÜL YORULMAZ	ŞEF	KAHRAMANMARAŞ SGİM	KAHRAMANMARAŞ / DULKADIROĞLU	
350	102250	AKİF PALTA	İCRA MEMURU	KAHRAMANMARAŞ SGİM	KAHRAMANMARAŞ / MERKEZ	
351	121783	MEHMET KELİR	VHKİ	KAHRAMANMARAŞ SGİM	KAHRAMANMARAŞ / MERKEZ	
352	131058	MURAT TAŞDAN	VHKİ	KAHRAMANMARAŞ SGİM	KAHRAMANMARAŞ / MERKEZ	
353	121843	GÜLŞAH ÇETİN	VHKİ	KARAMAN SGİM	KARAMAN / MERKEZ	
354	402573	DİLEK ÇELİK	MEMUR	KARS SGİM	KARS / MERKEZ	

Figure A.2 A Screenshot from Original Document of the KHK No. 679

KURUMU: MİLLİ EĞİTİM BAKANLIĞI

S.NO	D. TARİHİ	ADI SOYADI	BABA ADI	UNVAN	GÖREV İLİ	GÖREV İLÇESİ
1	../05/1980	ŞEREF ŞAHİN	FEVZİ	Öğretmen	ADİYAMAN	MERKEZ
2	../05/1982	HATİCE ABLAK	MEHMET	Öğretmen	AFYONKARAHİSAR	ŞUHUT
3	../12/1978	MERYEM HAYAL	ALİ	Öğretmen	ANKARA	KEÇİÖREN
4	../09/1974	EMİNE EŞİT	ALİ	Öğretmen	ANKARA	SİNCAN
5	../07/1975	MEVLÜDE YAVUZ	NURHAN	Öğretmen	GAZİANTEP	ŞEHİTKAMİL
6	../06/1985	EBU AKİL KARASAKAL	HASAN	Öğretmen	HATAY	DÖRTYOL
7	../12/1980	YÜKSEL ÇOBAN	İSMET	Öğretmen	İSTANBUL	BAĞCILAR
8	../12/1981	MEHMET FATİH ELÇİ	MEMET ŞÜKRÜ	Öğretmen	İSTANBUL	EYÜP
9	../02/1970	ÖZCAN SOLMAZ	BAYRAM	Öğretmen	İSTANBUL	ZEYTİNBURNU
10	../11/1973	YALÇIN BARANSU	BAHATTİN	Öğretmen	İZMİR	KARABAĞLAR
11	../02/1981	KUDRET ORAK	EMİRHAN	Öğretmen	KAHRAMANMARAŞ	NURHAK
12	../03/1979	OKTAY SAYAR	MUSTAFA	Öğretmen	MUĞLA	MARMARİS
13	../01/1981	YILDIZ KUBAT	RECEP	Öğretmen	MUĞLA	MARMARİS

Table A.1 All KHKs Published During the Emergency Rule

KHK No	Publication Date	Official Gaz. No	Legislation No	Publication Date	Official Gaz. No
667	23/07/2016	29779	6749	29/10/2016	29872
668	27/07/2016	29783	6755	24/11/2016	29898
669	31/07/2016	29787	6756	24/11/2016	29898
670	17/08/2016	29804	7091	08/03/2018	30354
671	17/08/2016	29804	6757	24/11/2016	29898
672	01/09/2016	29818	7080	08/03/2018	30354
673	01/09/2016	29818	7081	08/03/2018	30354
674	01/09/2016	29818	6758	24/11/2016	29898
675	29/10/2016	29872	7082	08/03/2018	30354
676	29/10/2016	29872	7070	08/03/2018	30354
677	22/11/2016	29896	7083	08/03/2018	30354
678	22/11/2016	29896	7071	08/03/2018	30354
679	06/01/2017	29940	7084	08/03/2018	30354
680	06/01/2017	29940	7072	08/03/2018	30354
681	06/01/2017	29940	7073	08/03/2018	30354
682	23/01/2017	29957	7068	08/03/2018	30354
683	23/01/2017	29957	7085	08/03/2018	30354
684	23/01/2017	29957	7074	08/03/2018	30354
685	23/01/2017	29957	7075	08/03/2018	30354
686	07/02/2017	29972	7086	08/03/2018	30354
687	09/02/2017	29974	7076	08/03/2018	30354
688	29/03/2017	30022	7087	08/03/2018	30354
689	29/04/2017	30052	7088	08/03/2018	30354
690	29/04/2017	30052	7077	08/03/2018	30354
691	22/06/2017	30104	7069	08/03/2018	30354
692	14/07/2017	30124	7089	08/03/2018	30354
693	25/08/2017	30165	7090	08/03/2018	30354
694	25/08/2017	30165	7078	08/03/2018	30354
695	24/12/2017	30280	7092	08/03/2018	30354
696	24/12/2017	30280	7079	08/03/2018	30354
697	12/01/2018	30299	7098	08/03/2018	30354
701	08/07/2018	30472	7150	03/11/2018	30584

Table A.2 The Number of Dismissals by Institutions

Institution	Coded Dismissal Number
Ministry of Interior	41,863
Ministry of National Education	34,342
Ministry of National Defense	13,367
Ministry of Health	7,755
Higher Education Institutions	7,507
Ministry of Justice	7,242
Prime Ministry	4,731
Ministry of Finance	2,813
Ministry of Labour and Social Security	1,458
Ministry of Transport, Maritime Affairs and Communication	1,177
Ministry of Food, Agriculture and Livestock	1,115
Ministry of Energy and Natural Resources	984
Ministry of Family and Social Policies	605
Ministry of Forestry and Water Affairs	594
Ministry of Science, Industry, and Technology	544
Ministry of Environment and Urbanization	512
Ministry of Youth and Sports	487
Ministry of Foreign Affairs	481
Ministry of Customs and Trade	431
Ministry of Culture and Tourism	259
Court of Cassation	236
Court of Accounts	163
Ministry of Development	94
Council of State	91
Turkish Grand National Assembly	89
Ministry of Economy	77
General Staff of Turkish Armed Forces	22
Ministry of EU Affairs	20
Supreme Election Board	18
Student Selection and Placement Center	15
Secretariat of National Security Council	1
Total	129,093

Table A.3 Quarterly Public Employee Data Shared by the Presidency of Strategy and Budget

Period	Permanent	Contracted	Permanent Workers	Temporary Workers	Temporary	Others	Total
March, 2015	2,823,760	127,156	322,346	25,103	22,976	97,500	3,418,841
June, 2015	2,822,518	134,542	320,769	33,577	22,791	97,500	3,431,697
September, 2015	2,889,322	139,725	324,265	25,738	22,897	97,500	3,509,447
December, 2015	2,894,091	149,133	328,701	28,364	22,741	97,500	3,520,530
March, 2016	2,922,961	148,392	389,971	23,002	22,579	97,500	3,604,405
June, 2016	2,928,353	154,171	389,442	30,709	22,239	97,236	3,622,150
September, 2016	2,883,587	150,514	388,407	27,700	21,776	97,236	3,569,220
December, 2016	2,854,243	180,377	385,419	22,774	21,490	97,236	3,561,539
March, 2017	2,848,696	188,145	382,582	18,835	21,036	98,730	3,558,024
June, 2017	2,838,824	215,696	389,226	26,807	20,267	98,997	3,589,817
September, 2017	2,806,453	238,907	384,366	24,522	20,251	98,997	3,573,496
December, 2017	2,831,062	246,294	384,911	19,157	19,645	101,666	3,602,735
March, 2018	2,826,883	256,290	486,618	24,391	19,241	101,058	3,714,481
June, 2018	2,861,891	292,993	809,254	65,864	100,837	100,837	4,130,839
September, 2018	2,861,812	325,879	944,712	61,155	102,055	102,055	4,295,613
December, 2018	2,862,765	349,618	984,226	52,275	103,298	103,298	4,352,182
March, 2019	2,891,952	369,801	1,094,766	57,044	103,519	103,519	4,517,082
June, 2019	2,901,449	392,392	1,110,350	61,720	103,825	103,825	4,569,916
September, 2019	2,917,401	421,779	1,108,318	60,413	104,288	104,288	4,612,199
December, 2019	2,939,450	427,550	1,123,864	48,567	104,643	104,643	4,644,074

Figure A.3 Heatmap of the Dismissals by Date and Ministry (Considering the 99 Percentile of the Values)

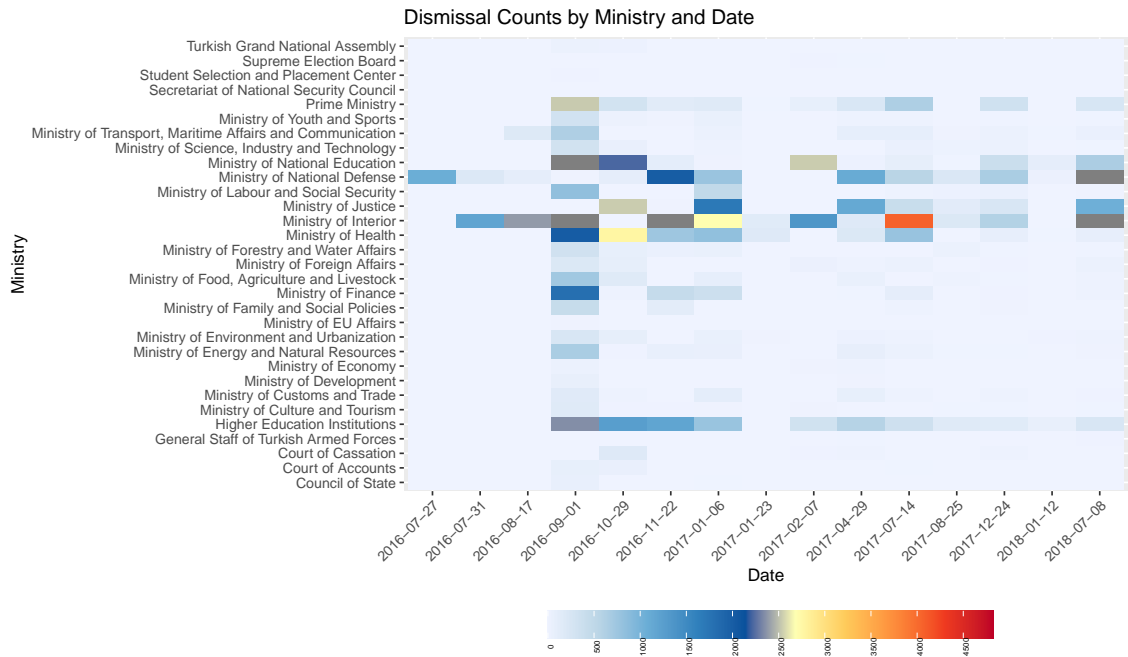


Figure A.4 Heatmap of the Dismissals by Date and Ministry (Logged)

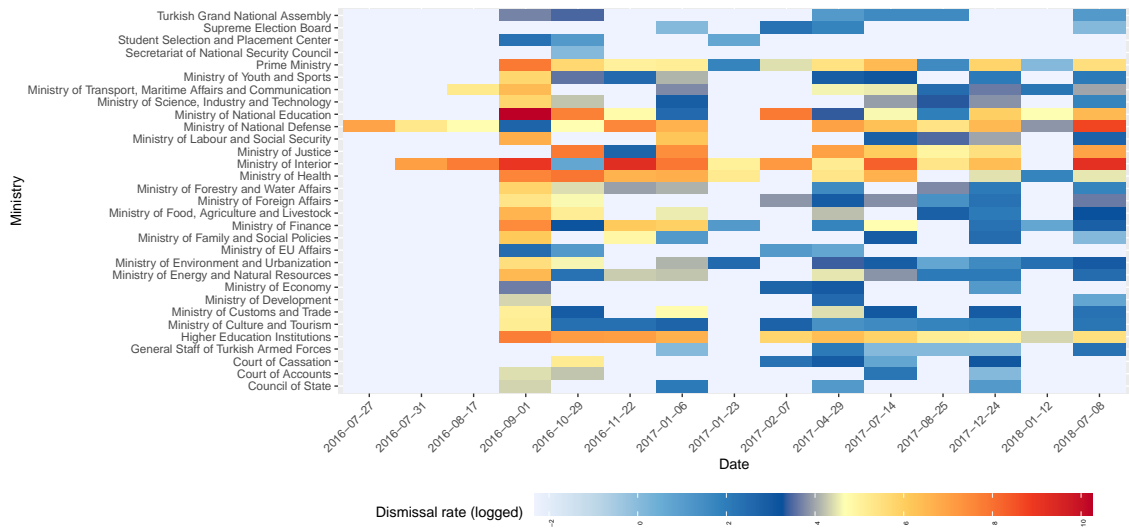


Table A.4 The Impact of Being in Different Regions on Dismissal Rates, the Base is Southeast Anatolia Region

	Dismissal Rate
(Intercept)	0.7284*** (13.4014)
Aegean Region	0.1006 (1.4554)
Central Anatolia Region	0.0592 (0.7753)
Central East Anatolia Region	0.1924* (2.4024)
East Black Sea Region	-0.1973* (-2.5427)
East Marmara Region	-0.1360+ (-1.8104)
Istanbul Region	-0.2846** (-2.9722)
Mediterranean Region	0.0189 (0.2601)
Northeast Anatolia Region	-0.1569+ (-1.8580)
West Anatolia Region	0.0695 (0.8395)
West Black Sea Region	-0.0054 (-0.0746)
West Marmara Region	-0.2749** (-3.2880)
Mean of DV	0.7
Num.Obs.	970
R2	0.071

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table A.5 The Impact of Being in Different Regions on Dismissal Rates, the base is Tekirdağ Subregion

	Dismissal Rate
(Intercept)	0.2574** (2.8478)
Ankara Subregion	0.7839*** (5.9568)
Adana Subregion	0.2441+ (1.9095)
Ağrı Subregion	0.1533 (1.1773)
Antalya Subregion	0.6010*** (5.1749)
Aydın Subregion	0.6110*** (5.3932)
Balıkesir Subregion	0.3677** (2.9710)
Bursa Subregion	0.3470** (2.9297)
Erzurum Subregion	0.4448*** (3.5940)
Gaziantep Subregion	0.3830** (2.8113)
Hatay Subregion	0.5539*** (4.5074)
Istanbul Subregion	0.1865 (1.5742)
Izmir Subregion	0.3295** (2.6222)
Kastamonu Subregion	0.3493** (2.9790)
Kayseri Subregion	0.4749*** (4.1600)
Kırkkale Subregion	0.6006*** (5.0135)
Kocaeli Subregion	0.3258** (2.8963)
Konya Subregion	0.3762** (3.1404)
Malatya Subregion	0.8739*** (7.4156)
Manisa Subregion	0.6703*** (6.0190)
Mardin Subregion	0.5096*** (4.0554)
Samsun Subregion	0.5639*** (4.9954)
Şanlıurfa Subregion	0.4970*** (3.9547)
Trabzon Subregion	0.2737** (2.6024)
Van Subregion	0.3829** (3.0472)
Zonguldak Subregion	0.4579** (3.1696)
Mean of DV	0.7
Num.Obs.	970
R2	0.136

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table A.6 The Impact of Being in Eastern Anatolian Region and pro-Kurdish Peoples' Democratic Party Vote Share on Dismissal Rate

	(1)	(2)	(3)
(Intercept)	0.6980*** (40.9541)	0.6834*** (40.6632)	0.6831*** (36.9830)
South East Anatolia	0.0304 (0.5188)		
Central East Anatolia		0.2374*** (3.7944)	
Kurdish Vote			0.1409* (2.0009)
Num.Obs.	970	970	970
R2	0.000	0.015	0.004

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: The Central East Anatolia Region (TRB) includes the provinces of Malatya, Elazığ, Bingöl, Tunceli, Van, Muş, Bitlis, and Hakkari. The Southeast Anatolia Region (TRC) includes the provinces of Gaziantep, Adıyaman, Kilis, Şanlıurfa, Diyarbakır, Mardin, Batman, Şırnak, and Siirt.

APPENDIX B

Table B.1 Summary of Teacher Employment and School Facilities in Turkish Ministry of Education (2015-2019)

School Year	Teachers (Total)	Teachers (Contracted)	Schools	Classrooms
2015-2016	863,126	NA	51,620	553,066
2016-2017 (1st semester)	881,832	17,877	52,693	581,667
2016-2017 (end of year)	868,269	18,752	53,098	554,405
2017-2018	880,673	38,697	53,870	568,645
2018-2019	907,567	82,673	54,036	571,351

Variables	Control	Treatment	p-value
Exam Score	-0.0445	0.2341	0.0000
Kurdish Vote	0.1275	0.0368	0.0000
Female School Attainment Rate	0.4972	0.4997	0.0001
Illiteracy Rate	5.6360	4.2624	0.0000
Average Nighttime Light	-0.0034	-0.0918	0.0020

Table B.2 Balance Table for Analysis on Ministry of Education using Binary Treatment Variable

Table B.3 Effect of Dismissals on Exam Score (Median Ranking Schools)

	KHK672 (2013-2017)		KHK672 (2013-2019)		All KHKs (2013-2017)		All KHKs (2013-2019)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dismissal (Binary)	-0.3047*** (0.0620)		-0.1675*** (0.0457)		-0.2792*** (0.0592)		-0.1422** (0.0456)	
Dismissal (Cont's)		-0.1112*** (0.0198)		-0.0637*** (0.0152)		-0.0820*** (0.0178)		-0.0513*** (0.0131)
Illiteracy Rate	0.0093 (0.0130)	0.0090 (0.0132)	-0.0308+ (0.0159)	-0.0324* (0.0160)	0.0113 (0.0122)	0.0062 (0.0126)	-0.0319+ (0.0163)	-0.0343* (0.0162)
Average Nighttime Light	0.8016* (0.3667)	0.8052* (0.3715)	0.2943 (0.2148)	0.2895 (0.2131)	0.8015* (0.3704)	0.8006* (0.3741)	0.2917 (0.2150)	0.2898 (0.2131)
Female School Attainment Rate	-3.0022 (3.4688)	-2.6845 (3.5260)	-6.8794* (2.9659)	-6.9195* (2.9932)	-2.9937 (3.4875)	-3.0697 (3.4784)	-6.8775* (2.9740)	-7.0938* (2.9752)
Kurdish Vote	-0.7863 (0.7796)	-0.7736 (0.7871)	-0.6578 (0.6496)	-0.6784 (0.6642)	-0.7482 (0.7782)	-0.6782 (0.7998)	-0.6446 (0.6515)	-0.6196 (0.6642)
Num.Obs.	5808	5808	6884	6884	5808	5808	6884	6884
R2	0.724	0.723	0.577	0.577	0.723	0.722	0.577	0.577
Std.Errors	by: District		by: District		by: District		by: District	
FE: District	X	X	X	X	X	X	X	X
FE: Year	X	X	X	X	X	X	X	X

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

The unit of observation is district-year. Standard errors are robust and clustered by districts.

Table B.4 Effect of Dismissals on Exam Score (Lowest Ranking Schools)

	KHK672 (2013-2017)		KHK672 (2013-2019)		All KHKs (2013-2017)		All KHKs (2013-2019)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dismissal (Binary)	-0.1148 (0.0792)		-0.0542 (0.0618)		-0.1794* (0.0794)		-0.0388 (0.0627)	
Dismissal (Cont's)		-0.0570* (0.0271)		-0.0373 (0.0238)		-0.0629** (0.0222)		-0.0486* (0.0195)
Illiteracy Rate	0.0697*** (0.0189)	0.0692*** (0.0188)	0.0176 (0.0168)	0.0176 (0.0165)	0.0609** (0.0191)	0.0676*** (0.0184)	0.0069 (0.0197)	0.0166 (0.0164)
Average Nighttime Light	0.3269 (0.3279)	0.3207 (0.3286)	-0.0146 (0.2375)	-0.0221 (0.2380)	0.2620 (0.3332)	0.3116 (0.3268)	-0.0331 (0.2400)	-0.0299 (0.2402)
Female School Attainment Rate	-4.9769 (3.0608)	-4.9851 (3.0385)	-9.5438** (3.0106)	-9.6870** (3.0062)	-3.2912 (2.9749)	-5.3829+ (3.0463)	-7.9107** (2.9485)	-10.0301*** (3.0240)
Kurdish Vote	-1.3443*** (0.3779)	-1.3531*** (0.3802)	-1.1728*** (0.3148)	-1.1905*** (0.3143)		-1.2929** (0.4054)		-1.1499*** (0.3167)
Num.Obs.	5808	5808	6884	6884	5808	5808	6884	6884
R2	0.380	0.380	0.295	0.296	0.379	0.381	0.294	0.296
Std.Errors	by: District	by: District	by: District	by: District	by: District	by: District	by: District	by: District
FE: District	X	X	X	X	X	X	X	X
FE: Year	X	X	X	X	X	X	X	X

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

The unit of observation is district-year. Standard errors are robust and clustered by districts.