A TEXT-AS-DATA ANALYSIS: TURKISH BILATERAL INVESTMENT TREATIES OVER TIME

by

Aişe Gül Akkoyun

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ABSTRACT

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This study presents the first systematic investigation into the design of Turkish Bilateral Investment Treaties (BITs) through the lens of computational analysis. By constructing an extensive dataset of 3102 BIT texts, the text-as-data methods employed allow for mapping BIT content automatically and capturing nuanced differences in treaty design, offering variables for more accurate predictions of treaty evolution. It adopts the binary evaluation model that highlights the presence or absence of treaty provisions, thereby aligning more closely with the operational realities of international law. This nuanced approach has enabled a detailed mapping of Turkey's BIT content, illuminating how its investment treaty design has evolved in accordance with both global investment law trends and the nation's specific economic and legal imperatives. The findings establish Turkey as a discerning participant within the global BIT framework, adept at conforming to international norms while innovatively adapting to regional developmental and policy necessities. This analysis provides a benchmark for Turkey's strategic approach to international investment agreements and its engagement with the global investment regime.

Keywords: ***Bilateral investment treaties (BITs), international investment law, computational legal analysis, treaty design, keyword (lexicon) based text analysis, Turkey***

ÖZETÇE

VERİ OLARAK METİN ANALİZİ: TÜRKIYE'NİN İKİLİ YATIRIM ANLAŞMALARININ ZAMAN İÇERİSİNDEKİ DEĞİŞİMİ

Kamu Hukuku Yüksek Lisans
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Bu çalışma, Türk İkili Yatırım Anlaşmaları (BIT) tasarımını ilk kez sistemli bir şekilde bilgisayarlı analiz yöntemleri kullanarak incelemektedir. Toplamda 3102 BIT metninden oluşan geniş bir veri seti kullanılarak, metinleri veri olarak kullanma yöntemleriyle anlaşmaların içeriği otomatik olarak haritalanmış ve antlaşmalar arasındaki ince farklar tespit edilmiştir. Bu sayede anlaşmaların zaman içindeki evrimini daha doğru öngörebilecek değişkenler ortaya konmuştur. Çalışmada, antlaşma hükümlerinin varlığını veya yokluğunu belirten ikili değerlendirme modeli benimsenmiş, bu model uluslararası hukukun pratik gerçeklikleriyle daha uyumlu bir hale gelmiştir. Bu detaylı metot, Türkiye'nin ikili yatırım antlaşmaları içeriğini ayrıntılı bir şekilde çizerek, yatırım antlaşması tasarımının küresel yatırım hukuku trendleri ve Türkiye'nin özel ekonomik ve hukuki gereksinimleri doğrultusunda nasıl geliştiğini göstermiştir. Elde edilen bulgular, Türkiye'yi küresel ikili yatırım antlaşmaları düzeninde seçici ve uyarlamaya açık bir oyuncu olarak sergilemektedir. Bu analiz, Türkiye'nin uluslararası yatırım anlaşmalarına yaklaşımını ve küresel yatırım rejimiyle etkileşimini değerlendirmek için bir referans noktası oluşturur.

Anahtar Kelimeler: ***İkili yatırım anlaşmaları, uluslararası yatırım hukuku, hesaplamalı hukuk analizi, anlaşma tasarımı, anahtar kelime (sözlük) tabanlı metin analizi, Türkiye***

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BITs	Bilateral Investment Treaties
FCN	Friendship, Commerce and Navigation Treaties
IIA	International Investment Agreements
TIPs	Treaties with Investment Provision
FDI	Foreign Direct Investment
IIL	International Investment Law
MITs	Multilateral Investment Treaties
FET	Fair and Equitable Treatment
MFN	Most Favoured Nation
VCLT	the Vienna Convention on the Law of Treaties
GDP	Gross Domestic Product
UNDP	the United Nations Development Programme
HDI	Human Development Index
IPE	International Political Economy
WTO	World Trade Organization
PTA	Preferential Trade Agreement
EU	European Union
UNCTAD	United Nations Conference on Trade and Development
OECD	Organisation for Economic Cooperation and Development
ICSID	International Centre for Settlement of Investment Disputes
ISDS	investor-state dispute settlement
SSDS	State-State Dispute Settlement
ELS	Empirical Legal Studies
OCR	Optical Character Recognition
ISO	International Organization for Standardization

INTRODUCTION

Deming once points out, "without data, you're just another person with an opinion."[1] It draws attention to the importance of the data. Between 1982 and 2011, the United States entered into 47 treaties, while China entered into 130, with many of these treaties signed from the early 1990s onward. In a very short period of time, these are extraordinary numbers for sovereign powers entering into practice of drafting treaty just over thirty years. Counting the 13 international investment agreements ("IIAs") that entered into force in 2021, the size of the IIA universe comprises 3,288 (2,861 bilateral investment treaties ("BITs") and 427 treaties with investment provisions ("TIPs)[2] agreements.[3] Within this intricate network, Turkey has emerged as a prolific participant, having inked 132 BITs—ranking third after China and Germany. BITs not only form the backbone of IIL but also significantly influence the conduct of states and foreign investors by delineating the rights and obligations that govern cross-border investments. These treaties serve to mitigate investment risks, encourage foreign direct investment (FDI), and protect investors against unjust treatment, expropriation, and discrimination. BITs encourage investment because their clear, enforceable rules to protect the foreign investor reduce the risks that the investor would otherwise face, and a reduction in risk, all else being equal, encourages investment.[4]

The challenge lies in the continuously expanding universe of BITs, making it increasingly difficult to track and comprehend the evolving standards and provisions contained within. This complexity underscores the necessity for effective tools and methodologies to analyze and interpret the burgeoning body of BITs accurately.

[1]See quotation; https://www.etf.europa.eu/en/news-and-events/news/without-data-youre-just-another-person-opinion-w-edwards-deming

[2] TIPs refer to bilateral or multilateral international agreements between countries that include specific provisions related to foreign investments, "Bilateral Investment Treaties," Melbourne Law School, last modified 2020, accessed March 8, 2023, https://unimelb.libguides.com/c.php?g=929887&p=6719573.

[3] UNCTAD, "World Investment Report 2022," 65 (2022). According to data from the Global SWF, accessed March 8, 2023, https://globalswf.com.

[4] Jeswald W. Salacuse, BIT by BIT: The Growth of Bilateral Investment Treaties and Their Impact on Foreign Investment in Developing Countries, 24 *Int'l Law*. 655 (1990), available at http://www.jstor.org/stable/40706447.

Changes in technology, which redefine how legal systems operate, present an alternative structure for a data-centered society, distinct from traditional positive law. Applying computational techniques to humanities data should ultimately yield new scholarly questions and knowledge. Computational analysis of law has been proliferating rapidly over the past two decades. For example, Burdick, Drucker, Lunenfeld, Presner, and Schnapp[5] introduces the digital humanities and the use of computational techniques in the field. Others have examined how computational approaches are reshaping the legal landscape. For example, Livermore and Rockmore[6] have emphasized the significance of computational methods for legal analysis, highlighting how these tools can uncover insights and patterns within legal texts that might not be apparent through traditional methods. Their findings are a powerful indication of the potential impact of computational methods on legal research and analysis. The best way to accomplish these tasks is through the interdisciplinary collaboration between technical experts and humanists. The analyzing the massive collection of BITs has been essentially hard for the corpus law but the text as data analysis.[7] However, apart from a few exceptions,[8] no empirical effort has been made to examine the investment treaty practice of Turkey. In the absence of empirical knowledge, legal scholars, and investment policy makers are bound to rely on potentially misleading anecdotal evidence to inform their normative evaluations and policy assessments.[9] This is problematic.

To address this gap, this study employs a binary coding system within its computational analysis framework. Unlike frequency counts, which enumerate how often a feature occurs, binary coding identifies the mere presence (1) or absence (0) of treaty provisions. This binary approach is conceptually robust for this research, emphasizing the impact of the presence of legal clauses on the fabric of BITs, rather than the emphasis on their repeated mention, which may not add additional legal significance. This methodological decision aligns with the dichotomous nature of

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[5] Anne Burdick, Johanna Drucker, Peter Lunenfeld, Todd Presner & Jeffrey Schnapp, Digital Humanities 141 (MIT Press, 2012).

[6] Michael A. Livermore & Daniel N. Rockmore, Law as Data: Computation, Text, & the Future of Legal Analysis, (2019).

[7] Wolfgang Alschner & Dmitriy Skougarevskiy, Mapping the Universe of International Investment Agreements, 19 J. Int'l Econ. L. 561, 564-65 (2016).

[8]UNCTAD, International Investment Agreements Navigator, available at https://investmentpolicy.unctad.org/international-investment-agreements/.,EDIT-Electronic Database of Investment Treaties and Mapping BITs provide country specific assessment, available at https://edit.wti.org/document/investment-treaty/search.

[9] Wolfgang Alschner, The Impact of Investment Arbitration on Investment Treaty Design: Myth Versus Reality, 42 *Yale J. Int'l L.* 1 (2017), available at https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:5NG8-SNK0-00CW-H04R-00000-00&context=1516831.

legal instruments, where features either exist with potential implications for legal interpretation and application or do not. Such an approach is expected to yield more precise insights into the structural and functional evolution of Turkish BITs, reinforcing the analysis' relevance to the realities of legal practice and treaty enforcement.

Therefore, I conducted an empirical analysis and personally curated and generated the dataset for this research, and deliberately selected the empirical research methodology to ensure a rigorous and data-driven investigation. The purpose of this article is to conduct a comprehensive empirical analysis of BITs, with a particular emphasis on the Turkish perspective. The study seeks to identify and elucidate patterns and trends within the design of these crucial international agreements, focusing on three fundamental components: substantive protections, exceptions, and dispute settlement mechanisms. In pursuit of this objective, the study endeavors to translate and codify the existing BITs into the English language, ensuring accessibility and facilitating in-depth analysis. Its central aim is to evaluate and illuminate the significant disparities and variations among BITs, subsequently delving into the examination of how well various theoretical explanations account for these differences. The empirical findings within this study represent a substantial contribution to the existing literature. As a contribution to the existing body of literature, this study provides a comprehensive dataset that tracks the evolution of investment law, specifically within the realm of Turkish investment treaties, by employing dictionary method is a subset of keyword (lexicon) based textual analysis.[10] By conducting comparative analyses, the research endeavors to shed light on the extent to which Turkish BITs align with global standards and practices, thereby informing policy decisions and scholarly discussions. An innovative approach underlies this research, as it harnesses computational text analysis to uncover hitherto undiscovered insights and trends within IIL, adding a unique dimension to the existing body of research in this field.

How computational methods can be applied to analyze the BITs of Turkey? And, what insights can be gained from a computational analysis of Turkey's BITs? It assesses the prevalence and recurrence of specific treaty clauses throughout the years, drawing comparisons between

[10] In this study, I utilize keyword (lexicon)-based textual analysis, applying the dictionary method for binary analysis to ascertain the presence or absence of specific keywords or terms within the texts. This approach emphasizes the binary categorization and focusing on whether specific treaty provisions exist within the corpus. *See* Herbert M. Kritzer, *Empirical Legal Studies Before 1940: A Bibliographic Essay*, 6 J. Empirical Legal Stud. 925 (2009).

Turkey's BIT practices and those of other nations. Additionally, the research examines how economic development factors into the formulation of these treaties. However, the contribution of textual analysis is not limited to Turkish investment treaties and computational analysis literature. It will benefit from broader new data on issues such as the investment treaty clauses and its impact on the investment treaty design. This study is limited to the content analysis of the BITs with an understanding of the relevant empirical evidence. However, unlike previous studies[11], it does not elaborate the countries as rule makers and rule takers but group them according to development level that is set by World Bank's country groups[12] and find divergence and overlap in their treaty design. Further, it analyses Turkish treaty making practice specifically.

In summary, Chapter I defines the concepts of BITs and the text-as-data analysis and introduces the complex methodology and literature review governing IIL. Due to the multitude of novel text as data techniques under data driven legal research, and the large corpus of the IIL**,** dictionary method is the toolkit to uncover the hidden pattern of the investment law practice of Turkey overtime. Chapter II rigorously applies the chosen methodology to the realm of investment law, focusing on the systematic collection and thorough analysis of investment treaties to provide a nuanced understanding of Turkey's BIT landscape. Concluding, the study synthesizes key findings and outlines their implications, offering a concise exploration of Turkey's BIT practices and contributing valuable insights to the field of investment law.

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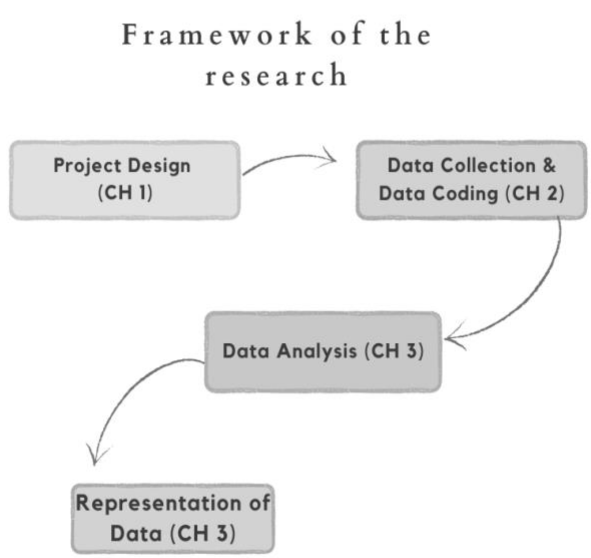
[11] Franck does not explicitly use the terms rule makers and rule takers but it points out how the negotiation process can create power imbalances between countries. *See* Susan Franck, International Arbitration: Between Myth and Reality, 5 *McGill J. Disp. Resol.* 1 (2018).
[12] The economies are currently classified as having four income levels: low, lower-middle, upper-middle, and high. World Bank Country and Lending Groups (2020), *World Bank Data Help Desk*, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

CHAPTER 1

INVESTIGATING BITS THROUGH TEXT-AS-DATA ANALYSIS

This study's framework adheres to Lee Epstein's protocol, (*Figure 1*)[13] which outlines three plus one components of empirical legal research. Epstein's protocol is valuable for this study because it offers a clear and accessible introduction to empirical methods that can inform legal arguments. It aligns with this study's focus on using computational text analysis to analyze the development of BITs, with a specific emphasis on Turkey. Also, her protocol is suitable because of its applicability and relevance to legal research. It provides the application of empirical methods effectively in the legal context and contributes to understanding BITs and their evolution. The protocol begins with project design (1), then moves on to data collection and coding (2), and the data analysis (3), finally, properly presenting the results (4). The goal of this research is to find out how the Turkish BITs practice has evolved over time. Hereinunder, as the project design, the background information and methodological explanation come first.

Figure 1: *Framework of the research based on Lee Epstein's protocol (three plus one components)*



[13] Lee Epstein & Andrew D. Martin, *An Introduction to Empirical Legal Research* (2014).

1.1.Legal Text: Bilateral Investment Treaties (BITs)

Throughout the nineteenth and twentieth century, the United States had established its bilateral economic relations on the basis of Friendship, Commerce and Navigation treaties (FCNs). [14] These are treaties that were entered into by global powers with their alliances based around their trading relationships and the freedom to navigate waters or territory. As described by Vandevelde in his book, the post-war FCN treaties saw a shift towards incorporating provisions related to foreign investment, ultimately serving as a foundation for modern BITs. [15] These historical treaties serve as a critical benchmark for assessing the evolution of investor protections over time. Analyzing the transition from FCNs to BITs reveals the increasing significance of IIL and the growing need for robust protections and regulations for foreign investors, marking a pivotal transformation in the field. This development gave rise to modern IIAs, such as BITs, which offer comprehensive protection to foreign investors. States have signed numerous IIAs to promote and protect foreign investment. Among these agreements, there exist approximately 2,500 "old-generation" IIAs, [16] which encompass 220 BITs currently in force. They typically feature broad provisions and include few exceptions or safeguards.[17] IIAs is an umbrella concept that includes BITs, multilateral investment treaties (MITs)[18] and provisions TIPs. BITs are the well-used and valuable tool of contemporary IIL. As of December 2022, approximately 2,850 BITs have been concluded, with 2,221 of them being in active force.[19]

[14] Treaty of Friendship, Commerce and Navigation, U.S.-Nic., Jan. 21, 1956, U.N.T.S. [10]. For the clauses see Article VIII/2, p.12 and Article VI/4, p.10.

[15] Kenneth J. Vandevelde, *The First Bilateral Investment Treaties: U.S. Postwar Friendship, Commerce and Navigation Treaties* 45 (2017).

[16] Old-generation IIAs are typically lack many of the features and standards (narrower scope, limited investor protection) that are present in newer generation IIAs, *See* Catharine Titi, The Evolution of Substantive Investment Protections in Recent Trade and Investment Treaties 1-2 (Nov. 7, 2018), available at SSRN: https://ssrn.com/abstract=3281574.

[17] United Nations Conference on Trade and Development, *World Investment Report 2022: International Tax Reforms and Sustainable Investment* (2022).

[18] MITs are multi-country international treaties that establish common rules and standards for the treatment and protection of foreign investments. *See* Practical Law, Multilateral Investment Treaties (MITs), Thomson Reuters, available at https://uk.practicallaw.thomsonreuters.com/4-502-5545?transitionType=Default&contextData=(sc.Default)&firstPage=true#:~:text=An%20international%20investment%20agreement%20made,companies%20in%20each%20other's%20territories

[19] UNCTAD, International Investment Agreements Navigator (Accessed on 17 August 2022).

The influential work "Bilateral Investment Treaties" by Rudolf Dolzer and Margrete Stevens[20] holds the distinction of being the first comprehensive publication to introduce and analyze BITs, offering an intricate comparative examination of the substantive provisions within investment treaties. Contemporary scholarship in this field often centers on individual countries' BIT practices[21] or focuses on specific substantive provisions[22] contained within BITs. Therefore, the primary objective of this study is to transcend the existing analyses by presenting a comparative study that delves into the BIT practice of a single nation and the application of similar provisions within these treaties.

While investment law encompasses a wide array of agreements, including MITs and TIPs, BITs typically share a fundamental set of standardized provisions and language. The contents of the BITs are typically divided into three parts: the definition chapter, a chapter on the substantive standards of the investment law, and a final chapter on dispute settlement. BITs are usually between 12 and 14 articles long.[23] The preambles of BITs express the aim of promotion and the protection of investments.

The first part offers definitions, especially of the concepts of 'investment'[24] and 'investor'[25]. In the second part, these treaties establish a framework of legal rights and protections

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[20] Rudolf Dolzer & Margrete Stevens, *Bilateral Investment Treaties*, (Martinus Nijhoff Publishers, 1995).

[21] Maria A. Gwynn, BITs in Practice: An Empirical and Comparative Analysis of South American Countries' BITs, in Power in the International Investment Framework 85, 85-125 (Palgrave Macmillan, London 2016).; E. Denza & S. Brooks, Investment Protection Treaties: United Kingdom Experience, 36 Int'l & Comp. L.Q. 908 (1987), available at http://www.jstor.org/stable/760362.

[22] See A. Rajabov, Application of the Umbrella Article Rule in Bilateral Investment Agreements International Practice, 3 Am. J. Pol. Sci. L. & Criminology 68 (2021), https://doi.org/10.37547/tajpslc/Volume03Issue12-11.; Rudolf Dolzer, Fair and Equitable Treatment: A Key Standard in Investment Treaties, 39 Int'l Law. 87 (2005), available at http://www.jstor.org/stable/40707790.

[23] Rudolf Dolzer, Ursula Kriebaum & Christoph Schreuer, Principles of International Investment Law 13 (2022).

[24] "Investment" covering "every kind of asset" owned or controlled by an investor of another party. While some agreements have complemented the broad asset-based definition with a list of clarifications aimed at excluding certain kinds of investments, other countries have opted to use "closed-list" definition approach. See United Nations Conference on Trade and Development (UNCTAD), Bilateral Investment Treaties 1995-2006: Trends in Investment Rulemaking, at 7 (2007).

[25] "Investor" is generally defined as an individual (natural person) or a company (juridical person) who make an investment and contribute capital or resources into the economic activities of a foreign country with the expectation of earning a return on their investment. See, while the Salini Costruttori S.p.A. and Italstrade S.p.A. v. Kingdom of Morocco case examined investor trough factors such as the ownership and control of the investing entity, the nature of its activities, and its nationality to establish whether the claimants met the criteria set out in the Italy-Morocco BIT. (*Salini Costruttori S.p.A. and Italstrade S.p.A. v. Kingdom of Morocco,* Decision on Jurisdiction, ICSID Case No. ARB/00/4 (23 July 2003).) Saluka v. Czech Republic case established that an entity could be considered an investor even if registered in a third-party country. (*Saluka Investments BV v. Czech Republic,* Partial Award, UNCITRAL, (17 March 2006).)

for foreign investors. Once the investment is made, the basic question is how the investor will be treated by the host government in the future. There are standards of treatment of investments in BITs including guarantees of fair and equitable treatment, protection against expropriation without compensation, and the freedom of full protection and security; a guarantee against arbitrary and discriminatory treatment; a guarantee of national treatment and a guarantee of most-favoured-nation treatment. These substantive provisions provide the conceptual foundation on which virtually all BITs rest. Standard terms are the main elements of BITs and are repeated in a same way. Muchlinski contends that, with rare exceptions among African and Asian treaties, most BITs include fair and equitable treatment clauses, and that national treatment is also included in the vast majority of investment treaties.[26]

Generalizations are of little use because each BIT is for a separate law. Vandervelde and Salacuse provide a general analysis of the law governing investment treaties as well as the essentials of IIL, such as the concept of investment, expropriation, protection standards, umbrella clauses, and so forth. However, individual states have sought to define such standards among themselves through the BIT process.

The most favoured nation clause is a common provision found in BITs, designed to ensure that foreign investors are treated on par with investors from any other nation. Its core objective is to promote nondiscrimination in the treatment of foreign investors. Greenwood explores the true purpose and consequences of MFN clauses within BITs. It sheds light on the ongoing debate within the investment law community, where some view most favoured nation clauses as mechanisms granting investors access to the most protective provisions across various treaties, while others criticize them for potential misuse by dishonest investors.[27] In a separate context, an in-depth analysis scrutinizes how this principle is defined, how it is applied, and its significance in resolving investment disputes between investors and states.[28]

[26] Peter Muchlinski, The Framework of Investment Protection: The Content of BITs, in *The Effect of Treaties on Foreign Direct Investment* 34, 34-71 (Karl P. Sauvant & Lisa Sachs eds., 2009).
[27] Christopher Greenwood, Most Favoured Nations Clauses in BITS - What Is Their Real Purpose (and Their Real Effect)? 3 EFILA REV. 343 (2018).
[28] Abdullah Gürsu, *Uluslararası Yatırım Hukukunda Adil ve Hakkaniyetli Muamele İlkesi* (Astana Yayınları 2020).

In essence, an expropriation is the action taken by a sovereign government to acquire private property. Therefore, in such cases, the state takes over the ownership of the property for its own use or transfers it to a third party. It includes the confiscation of property often with compensation paid to the property owner, in accordance with the laws and regulations of the specific country. This practice is an expression of a state's authority to use eminent domain for public or national interests, but it must be done in accordance with legal procedures and with proper compensation. There are noteworthy cases[29] underscore the significant role that expropriation issues play in IIL, particularly in situations where compensation is lacking. The literature on "expropriation without compensation" within IIL encompasses a diverse array of perspectives, providing a comprehensive understanding of this critical facet of investment treaties. The concept includes the nuances and complexities of the determination of compensation standards in the cases extends beyond a simplistic lawful/unlawful binary distinction. Instead, it necessitates a more comprehensive analysis that considers the broader spectrum of legal and practical implications when foreign investments are adversely impacted by expropriation without due compensation.[30] Adding to this discourse, Erden[31]enriches the literature by examining expropriation without compensation from a Turkish perspective, shedding light on the specific considerations and experiences of Turkey in navigating indirect exportation.

Nationalization, a form of expropriation, usually encompasses an entire industry or geographic region and typically occurs in the context of major social, political or economic change. The interpretation of nationalization and expropriation clauses in IIL is important. Nationalization could be lawful if carried out for a public purpose and with adequate compensation, while expropriation without compensation must be strictly justified under international law. In the

[29] In the SD Myers case, a U.S.-based company, SD Myers Inc., contended that Canada had expropriated its investment in hazardous waste disposal facilities without providing proper compensation, ultimately resulting in a violation of NAFTA's investment protections. (*S.D. Myers Inc. v. Canada*, Partial Award (Merits), Nov. 13, 2000.) Similarly, in the Metalclad case, Metalclad Corporation, also a U.S.-based firm, alleged that Mexican authorities had expropriated its investment in hazardous waste treatment facilities without appropriate compensation, leading to a finding that Mexico's actions constituted an expropriation without compensation under NAFTA., (*Metalclad Corp. v. Mexico*, Award, Aug. 30, 2000.)

[30] Steven R. Ratner, *Compensation for Expropriations in a World of Investment Treaties: Beyond the Lawful/Unlawful Distinction*, 111 Am. J. Int'l L. 7 (2017).

[31]Zeynep Nalçacıoğlu Erden, *Milletlerarası Yatırım Hukukunda Dolaylı Kamulaştırma* (On İki Levha Yayıncılık 2015).

Vivendi Universal S.A. v. Argentine Republic case,[32] which highlights the difference between the two concepts. In this case, the tribunal examined Argentina's actions during its economic crisis, which included measures affecting foreign investments. The tribunal held that nationalization, where the state takes over control of a specific industry, is distinct from expropriation without compensation, where the state deprives investors of their investments without offering fair compensation.

These various standards and guarantees are followed by the clause setting forth exceptions to these general obligations. BITs include a range of exceptions that limit the scope of the investment protections. The most common exceptions included in investment treaties are the essential security exception, the general public policy exception, and the prudential carve-out. The study notes that the exception clauses appear in at least 200 IIAs, with the majority of these exceptions relating to specific obligations, such as specific exceptions for essential security interests, public order, prudential measures, or taxation.[33] These exceptions are specified in this study because they vary depending on the specific investment treaty and the countries involved. While public policy exception allows countries taking measures to protect their public policy objectives, such as health, safety, and the environment, essential security interest exception include measures such as defense or public order. The prudential measures include the protection measures for the stability and integrity of the financial system.

The third part deals with dispute settlement. BITs typically provide for the resolution of disputes between investors and host states through international arbitration, rather than through domestic courts. The BITs dispute resolution clause is considered if the obligations in the agreements are not met. Most BITs contain two separate provisions on dispute settlement. In other words, the clauses governing the resolution of disputes between investors and governments differ. The BIT provisions call for arbitration between private investors and host governments and between the host and investors' governments themselves. One provides for arbitration in the event of disputes between the host state and foreign investors (investor-state arbitration). Investor-state

[32] *Vivendi Universal S.A. v. Argentine Republic,* ICSID Case No. ARB/97/3, Award II, 20 Aug. 2007. This case was filed with the International Centre for Settlement of Investment Disputes (ICSID) in 2002 and the final award was issued on July 20, 2007.
[33] William W. Burke-White & Andreas von Staden, Investment Protection in Extraordinary Times: The Interpretation and Application of Non-Precluded Measures Provisions in Bilateral Investment Treaties, 48 *Va. J. Int'l L.* 307 (2007).

arbitration is important with its historical evolution, core principles, and practical dynamics, in the realm of global investment landscape and the protection of foreign investments.[34] The BITs contain advance consent of the two states to international arbitration with investors from the other state party either before an ICSID tribunal or through some other form of arbitration. The other provision on dispute settlement in BITs provides for arbitration between the two states parties to the treaty (state-state arbitration). Whereas investor-state arbitration under BITs is very common, state-state arbitration has remained rare. Upon closer inspection, the investment arbitration clauses in BITs vary in a number of ways.

As Allee and Peinhardt[35] note, “the existing empirical literature on bits continues to treat these investment agreements as homogenous, despite strong reason to believe otherwise.” While earlier views tended to oversimplify BITs, characterizing them as similar across the board, recent research has unveiled their inherent heterogeneity. Scholars like Berger et al.[36] have conducted in-depth analyses of BIT provisions, revealing that not all BITs are created equal. They point to distinctions in areas such as market access guarantees for foreign investors and dispute settlement mechanisms, with liberal admission rules being seen as promoting bilateral foreign direct investment. This nuanced understanding challenges the earlier notion of homogeneity in BITs and underscores the importance of scrutinizing the specific provisions and details of each individual treaty. This perspective aligns with the findings of Dolzer and Stevens[37] noted that despite some common elements, the content and practical implications of BITs vary significantly due to exemptions for certain business sectors and the absence of complete clarity in the basic guarantees. In essence, while BITs share a fundamental structure, their substantive content and implications reveal their non-homogeneous nature, highlighting the importance of comprehensive and individualized treaty analysis.

The specific interests and policy goals of the countries negotiating them matter. BITs can vary significantly in their level of protection, the exception and the dispute resolution. For instance,

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[34] Christopher Dugan, *Investor-State Arbitration* (Oxford University Press 2008).

[35] Todd Allee & Clint Peinhardt, "Evaluating Three Explanations for the Design of Bilateral Investment Treaties," 66 *World Pol.* 47 (2014).

[36] Axel Berger, Matthias Busse, Peter Nunnenkamp & Martin Roy, "Do Trade and Investment Agreements Lead to More FDI? Accounting for Key Provisions Inside the Black Box," *10 Int'l Econ. & Econ. Pol'y* 247 (2013).

[37] Rudolf Dolzer & Margrete Stevens, *Bilateral Investment Treaties* (1995).

the essential security interest exception is included in the United States-Argentina BIT, which was not negotiated as a condition of providing investor protection by the capital-importing state from the capital-exporting state. The United States rather than Argentina proposed the essential security interest exception in its model BIT. As a result, the exception represents a situation in which the United States prioritized national security over protecting foreign investors.[38] In other words, national security has outweighed investor protection. A country's national security interests take precedence when the two interests collide. BITs can also vary in their levels of protection for foreign investors, including provisions on national treatment, most-favored-nation treatment, and protections against expropriation without compensation. While some BITs may include provisions on the exception of security, general public policy and prudential carve-out. Different mechanisms for resolving disputes between investors and host states can be included in BITs. Some BITs provide for investor-state arbitration, in which investors can bring claims against the host state directly, whereas others rely on state-state arbitration or other forms of dispute resolution.

1.1.1. Model Bilateral Investment Treaties

Model BITs are standard draft agreements that many countries use as a basis when negotiating and concluding BITs. These model agreements provide a starting point for the negotiation process and offering a set of predefined terms and clauses that can be adapted by the contracting parties. BITs -like other international investment agreements- fall within the framework of the Vienna Convention on the Law of Treaties (VCLT).[39] However, BITs serve as a useful reference point for negotiating BITs, it's important to understand that they are not legally binding agreements themselves. These models provide a common framework for investment

[38] Kenneth J. Vandevelde, Rebalancing through Exceptions, 17 *Lewis & Clark L. Rev.* 449 (2013).

[39] BITs are international agreements and are governed by international law principles, including the VCLT. The VCLT, a key instrument in international law, outlines guidelines for treaty formation, interpretation, and application. BITs are considered treaties and are therefore subject to VCLT principles, ensuring that their provisions are interpreted in line with VCLT rules, including those in Articles 31 to 33 regarding treaty interpretation. See Makane Moïse Mbengue, Rules of Interpretation (Article 32 of the Vienna Convention on the Law of Treaties), 31 *ICSID Rev. - Foreign Inv. L.J.* 388 (2016), https://doi.org/10.1093/icsidreview/siw004.

protection, investment promotion, and investment facilitation.[40] The concept of "soft law"[41] applies in the sense that Model BITs are non-binding guidelines that offer flexibility in tailoring the final treaty to set the specific interests and circumstances of the contracting states. When both parties agree on the terms and sign the treaty, it becomes a legally binding document under international law. Model BITs can be quite influential because they reflect the standard practices and preferences of states in structuring their investment treaties. They help states establish common ground during negotiations and facilitate the conclusion of these important treaties. Ideally, the tracing of the deviation from the model draft would be conducted through an examination of the model treaties themselves.

During the 2000s, a significant shift occurred as numerous states began to establish their own standards for investment protection through the formulation of model BITs. These BITs encompass a diverse array of models, each mirroring the unique priorities and policy goals of the nation's responsible for their creation. Notably, the United States had pioneered the development of a model BIT text, shaping the course of modern investment agreements.[42] Only the United States has concluded four different model BITs over the 16 years from 1994 to 2012. The United States Model BITs, which were revised in 1994, 1998, 2004, and 2012, aim to provide robust protection for American investors operating in foreign countries. These agreements cover a wide array of provisions, including those related to intellectual property rights, investment incentives, and the safeguarding of the United States-owned assets abroad. In response to various circumstances and challenges, the United States decided to halt all BIT negotiations and embarked on an extensive reassessment of its model BIT.[43] The process resulted in the introduction of a new model in 2004 that differed significantly from the previous the United States models, reflecting the evolving

[40] These terms are key concepts of foreign investment. Investment protection encompasses legal measures that safeguard foreign investments, ensuring property rights, nondiscrimination, and dispute resolution mechanisms. Investment promotion focuses on attracting investments by creating a favorable business environment and through incentives and marketing efforts. Investment facilitation aims to reduce barriers for investors and improve the ease of doing business. *See* Organisation for Economic Co-operation and Development, Investment Promotion and Facilitation, OE*CD iLibrary* (2020), https://www.oecd-ilibrary.org/sites/98f6a4b7-en/index.html?itemId=/content/component/98f6a4b7-en#wrapper
See https://www.oecd-ilibrary.org/sites/98f6a4b7-en/index.html?itemId=/content/component/98f6a4b7-en

[41] Vera Korzun, Enforcing Soft Law in International Investment Arbitration, 56 *Vand. J. Transnat'l L.* 1, 17 (2023).

[42] Gerald Aksen, *The Case for Bilateral Investment Treaties, in Private Investors Abroad: Problems and Solutions in International Business* in 1981, at 357 (1981).

[43] Kenneth J. Vandevelde, Model Bilateral Investment Treaties: The Way Forward, 18 *Sw. J. Int'l L.* 307 (2011).

priorities and concerns within the realm of international investment protection.[44] The model agreement texts of Russia in 2001, Canada's in 2004, France in 2006, Germany, Austria, Colombia and Mexico in 2008 which, can be counted as an example, prepared the draft text of the agreement.

The specific treatment of standards in investment treaties can vary depending on several factors, including the parties' negotiating positions, the host country's level of development, and the specific industry sectors targeted for investment. BITs are signed between highly heterogeneous country pairs with significant differences in size (GDP), level of development (per capita GDP), and institutional constraints.[45] According to the findings of this study, the impact of BITs on foreign direct investment (FDI) flows varies according to the level of economic development and the strength of political institutions in both the source and host countries. It discovers that the effects of BITs are more pronounced when there is a significant difference in GDP and GDP per capita between the source and host countries. In adopting the United Nations Development Programme's (UNDP) criteria for measuring the level of development, this study employs the Human Development Index (HDI) as a central framework. The HDI is a composite indicator that encapsulates various dimensions of development, offering a multifaceted understanding of a country's socio-economic and political landscape. These dimensions include indicators related to longevity, education, income, political freedom, and personal security. Through the HDI percentile groups, countries can be classified into developed or developing categories.[46]

This approach to development status offers a comprehensive perspective that takes into account a development criterion of countries. It's noteworthy that a substantial number of developing countries, such as Argentina, Chile, and Brazil in South America, or India and Sri Lanka in South Asia, have embarked on the development of model BITs. These models serve as

[44] S. A. Spears, The Quest for Policy Space in a New Generation of International Investment Agreements, 13 *J. Int'l Econ. L.* 1037 (2010).
[45] Fa R. Falvey & N. Foster-McGregor, Heterogeneous Effects of Bilateral Investment Treaties, 153 *Rev. World Econ.* / Weltwirtschaftliches Archiv 631 (2017).
[46] While developed nations typically occupying the top quartile of the HDI distribution, developing countries are distributed across high, medium, and low groups, based on their HDI percentiles, which range from 51-75 (high), 26-50 (medium), and the bottom quartile HDI (low). *See for the detailed anaylsis*, Onno Hoffmeister, Development Status as a Measure of Development, 36 *Statistical Journal of the IAOS* 1095 (2020). *And see* United Nations Department of Economic and Social Affairs, World Economic Situation and Prospects: Country Classification, at http://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf (last visited on 23 March 2023]).

invaluable tools during their negotiations with more developed nations like the United States, the United Kingdom, or Japan. Developing nations often employ their model BITs as counter drafts to ensure their interests are well-represented in the negotiation process. However, these BITs between developing countries tend to omit certain provisions that are commonly found in BITs drafted by developed countries.[47] Additionally, these models provide a foundational framework for negotiations with other developing countries in their respective regions, reflecting the diverse goals and concerns of nations at different stages of development.

In the realm of international investment agreements, the negotiation positions of the involved parties vary significantly. Typically, these positions reflect whether a country primarily exports or imports capital.[48] Scholars like Vandevelde[49] have underscored how capital-exporting nations shape the obligations within these agreements to exert control over investment flows and enhance their bargaining power. Rudolf Dolzer,[50] on the other hand, presents a different perspective, suggesting that capital-exporting states develop model treaties tailored to their interests. Meanwhile, capital-importing countries gradually formulate their preferences for specific treaty schemes, often crafting their own model drafts. This negotiation dynamic highlights an inherent asymmetry in most BITs, with one state acting as the source of capital and the other as the recipient, given the nature of investment flows between these nations. The level of development of a country plays a crucial role in shaping the design and evolution of such treaties. Creating a draft of BIT serves as a strategic move for capital exporting countries, offering them a distinct negotiating advantage. Typically, the party that initiates the drafting process retains control over the negotiations.

Indeed, the rise in the rate of litigation based on the hosting of foreign investments and investment agreements between the United States and Canada, which are traditionally in the

[47] Kenneth J. Vandevelde, *Bilateral Investment Treaties: History, Policy, and Interpretation* (Oxford University Press 2010).
[48] Capital exporting states tend to shape the terms of BITs and influence the negotiation agenda, given their role as the source of investment flows. Unlike, capital-exporting countries are those that invest their capital in other nations and aim to protect their interests abroad. *See* Barton Legum, Defining Investment and Investor: Who Is Entitled to Claim? 22 *Arb. Int'l* 521 (2006).
[49] Vandevelde, *Bilateral Investment Treaties*, at 189.
[50] J. W. Salacuse, BIT by BIT: The Growth of Bilateral Investment Treaties and Their Impact on Foreign Investment in Developing Countries, 24 *Int'l Law.* 655 (1990).

category of capital exporting countries,[51] also necessitates the need for these agreements to evaluate their role as the host state[52] for themselves, and the need for investment agreements to become host states. As a state, they realized that they were limiting their regulatory powers.[53] Legal actions initiated by investors against host states have revealed that investors do not necessarily take into account the host states' ability to pursue legitimate objectives, including fulfilling international obligations related to environmental protection[54], public health, labour rights, and human rights. Instead, they may perceive their own interests as paramount, potentially limiting the host states' regulatory capacity. The notable example of an investment dispute involving water privatization, involved a 30-year concession for water services in Buenos Aires obtained by the United States corporation Azurix. Disputes arose due to government interference with tariffs and contractual obligations. Arbitration under the 1991 Argentina-US BIT followed, with Azurix alleging treaty violations, including expropriation, fair and equitable treatment, non-discrimination, and full protection and security.[55]

Both developed and developing countries rely on template investment deals to negotiate. The use of different words by different states to express similar investment protection concepts increases the diversity of agreement language among countries, while also supporting the model agreement style. Thus, model investment agreements provide countries with investment protection standards and make it possible to draw parallels with the model in negotiations. As a result, model bilateral investment agreements allow for a comparison of textual variation and style adopted by countries. If compliance with model investment agreements is high, it is more likely to be legally meaningful and more consistent. It is crucial to understand the object of this study, that is a

[51] Wei Lian, Natalija Novta, Evgenia Pugacheva et al., The Price of Capital Goods: A Driver of Investment Under Threat, 68 *IMF Econ. Rev*. 509 (2020), https://doi.org/10.1057/s41308-020-00118-0.

[52] "Host state" refers to the country in which a foreign investor or foreign investment is located or taking place. The host state to be considered a contracting state under the ICSID Convention and fall under the jurisdiction of the International Centre for Settlement of Investment Disputes (ICSID). See Rudolf Dolzer, Ursula Kriebaum & Christoph Schreuer, *Principles of International Investment Law* 249 (Oxford University Press 2022).

[53] Catharine Titi, The Right to Regulate in International Investment Law (Revisited), *Int'l & Comp. Law Research Ctr*. (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4058447 The emphasis has transitioned from addressing imbalanced treaties favoring investors at the expense of the state's regulatory power to questioning the utility of new treaties that overly safeguard the right to regulate.

[54] As the international community grapples with the evolving relationship between investment and environmental protection, this shift in the legal framework opens up the possibility for States to seek cooperative strategies to rebalance their roles and responsibilities, facilitating the harmonization of approaches towards counterclaims for environmental damage in the context of international investment treaties.

[55] *Azurix Corp. v. Argentine Republic*, ICSID Case No. ARB/01/12, Award (July 14, 2006), available at https://icsid.worldbank.org/sites/default/files/parties_publications/C8394/Claimants%27%20documents/CL%20-%20Exhibits/CL-0058.pdf

computational legal analysis of BITs and their treaty design. To achieve this objective, a comparative analysis is conducted, which involves a meticulous examination of six distinct countries' model BITs in relation to Turkey's model treaties. The study encompasses a comprehensive assessment of the following model BITs: the 1994, 1998, 2004, and 2012 the United States model BITs; the 1991 and 2008 the UK model BITs; the 1995 Switzerland model BIT; the 1997, 2004, and 2019 Netherlands model BITs; the 1991, 1998, and 2008 Germany model BITs; the 2003 Chinese model BITs; and the 2000 and 2009 Turkey model BITs, resulting in a total of 16 model BITs. This research endeavors to identify and elucidate the specific features of these countries'[56] model investment treaties, while concurrently evaluating Turkey's model treaty practice.

1.2. Global Capital Flows and BITs: An IPE Perspective

The dynamics of global capital flows and their governance through BITs can be comprehensively understood within the framework of International Political Economy (IPE). Theories such as liberalism, which emphasizes the mutual benefits of open markets and investment flows, and structuralism, focusing on power imbalances and the stratification within the global economy, provide contrasting lenses through which the role and impact of BITs can be analyzed.[57]

BIT negotiation dynamics are significantly influenced by power asymmetries between developed and developing countries. The IPE perspective highlights how developed countries often leverage their economic and political power to shape BIT provisions in ways that can limit the policy space of developing countries.[58] This imbalance raises concerns about the equity and fairness of the international investment regime and its implications for sovereign decision-making.

It is important looking from an IPE perspective because BITs represent a critical intersection between the protection of foreign investors and the maintenance of domestic policy autonomy. Critics argue that BITs, particularly investor-state dispute settlement (ISDS) mechanisms, can

[56] These six countries were chosen for the comparative analysis due to their significant roles in IIL. The United States, United Kingdom, Switzerland, Netherlands, Germany, and China are renowned for their extensive networks of BITs, their economic significance, and their historical influence in shaping IIL.
[57] Gilpin, R. (2001). Global Political Economy: Understanding the International Economic Order. Princeton University Press.
[58] Salacuse, J. W. (2007). The Law of Investment Treaties. Oxford University Press., Schill, S. W. (2009). The Multilateralization of International Investment Law. Cambridge University Press.

constrain governments' ability to regulate in the public interest, privileging investor rights over environmental protection, labor standards, and public health.[59] Such perspectives underscore the tension between global economic integration and national sovereignty.

Turkey's strategic engagement with the BIT regime can be viewed through its efforts to attract foreign investment while striving to maintain regulatory sovereignty. The evolution of Turkish BITs reflects a nuanced approach to balancing investor assurances with safeguard clauses that protect public policies and national interests.[60] This approach illustrates Turkey's navigation of the complex interplay between global economic norms and national development objectives. It presents a compelling case for the adoption of innovative research methodologies. Thus, it is essential to recognize the potential of text-as-data analysis in unraveling the intricacies of BITs. This computational approach not only aligns with the empirical ambitions of legal research but also complements the theoretical insights gathered from the IPE perspective.

1.3.General Overview of Text as Data Analysis

Text-as-data have made important inroads in their respective disciplines, leading to new empirical results and theoretical innovations, and in recent years, researchers have begun to explore their application to the law.[61] Law search is another area in which there is the potential for broad application of law-as-data techniques, including machine learning and network analysis.[62] Treating legal texts as data lies somewhere between quantitative empirical legal studies and traditional, doctrine-oriented science. From the perspective of empirical legal studies, treating law as data offers the opportunity for quantitative analysis and builds upon the existing body of research in this field. Empirical research in law is not new.[63] Professor Leleiko[64] criticized legal scholarship in the 1970s for not using empirical studies for comprehensive analysis, instead relying

[59] Strange, S. (1994). States and Markets. Continuum., Stiglitz, J. E. (2007). Making globalization work. W.W. Norton & Company.
[60] J. W. Yackee, Bilateral Investment Treaties, Credible Commitment, and the Rule of (International) Law: Do BITs Promote Foreign Direct Investment? *Law & Society Review*, 42(4), 805-832. (2008).
[61] Michael A. Livermore & Daniel N. Rockmore, *Law as Data: Computation, Text, & the Future of Legal Analysis* 221, (2019).
[62] Faraz Dadgostari, Mauricio Guim, Peter A. Beling, Michael A. Livermore & Daniel N. Rockmore, Modeling Law Search as Prediction, 29 *Artificial Intelligence & Law* 3 (2021).
[63] Epstein & King, 69 U. Chi. L. Rev. at 13. *See also* John Henry Schlegel, *American Legal Realism and Empirical Social Science* (Univ. of North Carolina Press 1995). Herbert M. Kritzer, Empirical Legal Studies Before 1940: A Bibliographic Essay, 6 *J. Empirical Legal Stud.* 925 (2009).
[64] S. H. Leleiko, Clinical Education, Empirical Study, and Legal Scholarship, 30 *J. Legal Educ*. 149 (1979).

on limited traditional techniques. He suggests using empirical research and incorporating interdisciplinary knowledge into the research.

The computer science and large-unstructured data integration pushes the potential quantitative analysis. It enables the intersection of both doctrinal and empirical analysis. It provides an alternative approach to text interpretation, expanding the traditional scope of reading text. Text-as-data analysis is a comprehensive term for analyzing digital texts, from individual documents to large datasets, utilizing the computational power of computers and specialized software. This approach facilitates the use of various digital tools and quantitative techniques for identifying large-scale patterns. Rather than providing an absolute representation of the text, this approach offers a bird's-eye view of the law by processing substantial amounts of information. This method is known as distant reading which is firstly suggested by literary scholar Franco Moretti[65] in the computational study of the literature, here, distant reading of the IIL offers an entirely new perspective. With the growing availability of digitized text resources and the advancement of computational techniques, social scientists have started harnessing text as a valuable data source for investigating various phenomena. This method allows researchers to extract insights, patterns, and trends from legal texts efficiently.[66]

Text-as-data analysis involves extracting information from textual content that enables the user for drawing the inferences. The generated and extracted data can take a variety of forms, ranging from simple to complex. The generation of data via a specific textual analysis technique is dependent on the task at hand or the desired outcome. The content of data can be consisted of websites or legal documents. There is various example in law studies applied text analysis. For instance, Posner and de Figueiredo[67] worked on the members of the International Court of Justice vote in the interests of the states that appoint them by using statistical methods; and Allee, Elsig and Luggi[68] investigate international trade agreements and uses text analysis to determine the presence of the World Trade Organization (WTO) in PTAs. The data in the legal documents is

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[65] Franco Moretti, *Distant Reading* (Verso Books 2013).

[66] Grimmer, J., & Stewart, B. M. (2013). Text as data: The promise and pitfalls of automatic content analysis methods for political texts. *Political analysis*, *21*(3), 267-297.

[67] E. A. Posner & M. F. De Figueiredo, Is the International Court of Justice Biased? 34 *J. Legal Stud.* 599, 630 (2005).

[68] Allee, T., Elsig, M., & Lugg, A. (2017). The ties between the world trade organization and preferential trade agreements: A textual analysis. *Journal of international economic law*, *20*(2), 333-363.

already present, but in raw form. Textual analysis necessitates systematic data in order to rely on inferences.

BITs, as a legal corpus, provide large amounts of qualitative data. Some characteristics of BITs can be structured in a machine-readable format which makes certain computational analyses relevant. Therefore, the protections, exceptions and dispute resolution sections are subject to dictionary analysis technique.[69] The automation and the formal representation are more possible when the content and the layout of the data is more amenable. BITs are based on the model treaties which offers approximate standard; thus, the content does not much vary. BITs generally follow the model BITs, which have fixed patterns and structured contents. Nonetheless, investment treaty analysis provides a comprehensive picture of the treaties' legal content as well as possible trends and statistics as a result of their interpretation. The specific task and comparative analysis can provide a wide range of possible trends relevant to the formalized relationship. It also reduces the static result of the investment treaty analysis. Because of the computational method used to identify large-scale patterns and trends, there is a better chance of obtaining the previously hidden correlations/interpretation. Computational social science can help reduce that complexity, opening up unprecedented avenues for large-scale empirical research[70]. Thus, it aims to question the legal implications of international investment agreements from a treaty design perspective.

There are different available methods to convert text to data ranging from simple to complex. Text-as-data methods differ depending on the task at hand. Given the goal of pinpointing significant patterns within Turkish BITs, this research adopts a binary analysis framework, a straightforward and efficient model for textual examination. This method regards terms as binary indicators, focusing solely on their presence or absence in the text. This binary representation facilitates a focused investigation into whether specific treaty provisions are included, aligning with the study's objectives to uncover major trends in treaty design. The specific clauses and their individual words are critical in this case. The dictionary method is appropriate for this specific task

[69] Dictionary analysis is a text analysis technique is the part of the broader concept of text as data in computational social science. It relies on the presence of specific keywords for its alignment with particular themes. *See* Justin Grimmer & Brandon M. Stewart, Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts, 21 *Pol. Analysis* 267, 297 (2013).

[70] World Investment Report 2011: Non-Equity Modes of International Production and Development, UNCTAD (2011), available at http://www.unctad.org/en/PublicationsLibrary/wir2011_en.pdf. Article: The Impact of Investment Arbitration on Investment Treaty Design: Myth Versus Reality, 42 Yale J. Int'l L. 1, 3

and it utilizes the binary analysis approach to identify the presence of specific keywords within BIT texts. This method is geared towards recognizing whether particular legal clauses and protections are explicitly mentioned, marking their presence as 1 and absence as 0. It provides a clear binary profile of each treaty, highlighting the inclusion of certain treaty features without accounting for how frequently they are mentioned.

An instrumental variables approach is used in the analysis, which ignores the effects of investment claims but considers the level of economic development on treaty design. Using state-of-the-art empirical tools, the study examines the BIT practice of Turkey. It traces and measures the investment protection of Turkish BITs through the comparison on two levels. First, in terms of protective, exception and arbitration features, Turkey's investment treaties are at par with model BITs in global scale. Second, to analyze the BITs of Turkey and the rest of the BITs to reflect the change in investment treaty design in general.

Before addressing the application of the methodology to the legal documents (BITs), it is essential to have an understanding of the legal architecture that reviews the computational analysis of the legal texts under international and investment law. Due to the focus of the study is Turkey, it also provides the computational analysis method in Turkish legal scholarship.

1.3.1. Situating Methodology in International Law Practice

Legal studies focusing on the computational analysis can be found both in international and investment law. While investment law is of primary relevance, the international law literature contributes the methodology comparably very much. Eliav Lieblich offers a guidance on the methodology of conducting research in international law and provides fundamental framework for understanding how to formulate research questions and navigate primary and secondary sources in this field.[71] However, his guide is a valuable starting point, it still be considered that international legal research remains a complex and nuanced endeavor, which might require multiple approaches tailored to different research contexts. In line with this definition, the study shapes its research inquiry around the impact of the presence of investment clauses on indicating changes in treaty design. It is of course not entirely novel that no one has asked the research question of this study

[71] Eliav Lieblich, *How to Do Research in International Law? A Basic Guide for Beginners* 62 (2020).

before but not in this way. It can be said that the sub-questions of this research include the descriptive and automated computational analysis.

Computational text analysis, machine learning and predictive algorithms, which are widely used to help make sense of the world, have caused a new wave of technological tools in the field of international law. This is not the first time this study focuses on empirical analysis of IIL. There are scholars who work in the field of international law adopted the computational legal analysis method. These data-driven approaches open new avenues for empirically analyzing international law in all facets. Rather than focusing solely on the causes of international law's emergence or its impact on the world, modern technology allows us to consider international law from both perspectives.[72] This methodology does not actually change things international lawyers do but the way they do.

The computational analysis of international law is newly growing field of law. It enables to process enormous corpus of law as data. As Alschner describes, computational analysis of international law renders “legal analysis scalable and empowers international lawyers to study international law in unprecedented depth and breadth.”[73] The study analyses the content of 60 law review volumes published in the years 1998 and 2008. Between these years, 1,641 articles were published in the 60 law review volumes. According to the results, 26.4% of the articles use minimal empirical content, nearly half (45.8%) include some empirical content, and 5.7% present original empirical research.[74] It is for the benefit of the users of the data as offering the techniques to minimize the complexity of large corpus. It is for the benefit of the users of the data as offering the techniques to minimize the complexity of large corpus.

How international lawyers use computational analysis tools to their advantage question calls different answers. Both the procedural contributions of text-as-data tools can make to government lawyers' interactions with international law, as well as the substantive application of existing international law, whether new regulations are required, and how it can serve as a tool for

[72] W. Alschner, J. Pauwelyn & S. Puig, The Data-Driven Future of International Economic Law, *J. Int'l Econ. L.*
[73] Alschner, The Computational Analysis, supra note 70.
[74] Diamond, S. S., & Mueller, P. (2010). Empirical legal scholarship in law reviews. *Annual Review of Law and Social Science*, *6*, p. 587.

the authorities.[75] Using text as data tools assist international lawyers and scholars in conducting "more comprehensive and evidence-based doctrinal and legal-institutional research."[76] In the studies emphasis on the use of computational techniques by scholars, the text-as-data method in law is seen as the new toolkit for the research.[77] Another study considers computational analysis to be complementary to doctrinal scholarship in international law.[78] It aims to provide the potential application of the outcome in empirical legal scholarship as well as the focus of the research seeks to engage with the existing literature.[79] Hence, computational analysis serves as a means to explain and structure normative international law documents from a more objective and all-capture perspective.

1.3.2. International Investment Law Approach to the Methodology

The article "The Data-Driven Future of International Economic Law" marks a significant shift in empirical legal studies within the field of IIL, as it back to the computational analysis of extensive datasets. As a practical matter, methodology justifies two things which are an object of enquiry, and a lens by which to interpret that object.[80] In this respect, the object of the study is the BITs of Turkey and the computational method conducted in the research are untouched ground of IIL. Therefore, the investment law texts are taken as data to render legal analysis scalable. There are various computational tools to mine the data and to get reliable techniques for the legal prediction. However, it is important to adopt the consistent/scalable legal analysis technique that is matched with the research question. The dictionary method is employed to discern the presence of investment clauses, distinguishing between the research question, its importance, and the methodology (the approach to investigation). The originality of this study lies in its methodology and its innovative application. Much like Franco Moretti's concept of "Distant Reading" in the computational analysis of literature, this study introduces a novel perspective in the form of a distant reading of IIL.

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[75] A. Deeks, High-Tech International Law, 88 *Geo. Wash. L. Rev.* 574 (2020).
[76] Alschner, The Computational Analysis, supra note 70.
[77] Id at. Text as Data: The Promise and Pitfalls.
[78] U. Šadl & H. P. Olsen, Can Quantitative Methods Complement Doctrinal Legal Studies? Using Citation Network and Corpus Linguistic Analysis to Understand International Courts, *30 Leiden J. Int'l L.* 327, 349 (2017).
[79] Ole Kristian Fauchald, The Legal Reasoning of ICSID Tribunals – An Empirical Analysis, 19 *Eur. J. Int'l L.* 301, 364 (2008), https://doi.org/10.1093/ejil/chn011.
[80] S. Pahuja, Methodology: *Writing about how we do research, in Research Methods in International Law* (Edward Elgar Publishing, 2021).

In the light of great variety of literature governing IIL, a significant portion of legal practice and scholarship will approach questions of IIL from a corpus law[81] perspective. In the context of scholarly research, what's important about the study of IIL through computational analysis is a way of organizing the contribution into something new. Alschner's approach[82] stands out as a pioneering method, emphasizing the application of text-as-data techniques underscores the importance of treating treaty text as data to glean unprecedented insights. Schill and Gulay[83] on the other hand, presents a broader view, considering foreign direct investment (FDI) regulation as a complex transnational legal order, characterized by a multitude of legal instruments and diverse actors. The law and economics approach are examined in the non-doctrinal methodology part. This study, on the other hand, includes statistical data in order to analyze investment treaties and treaty design so that both can be reflected in more empirically oriented law and economic research as well as empirical legal studies (ELS). Ultimately, none of the methodologies proposed by Schill and Gülay align with the specific requirements of my study, except for the unique approach I have implemented. As the manual analysis of Turkish BITs' substantial volume is impractical, it employs a computational approach. This study shares common ground with Alschner's text-as-data methods, emphasizing the efficient analysis of vast datasets of Turkish BITs.

Investment law scholars have often emphasized that states modify investment agreements in response to developments in investment arbitration, and there is substantial research on the role of investor-state dispute settlement (ISDS) in shaping IIL[84]. However, this study diverges from that perspective by focusing on specific investment clauses that may have influenced investment treaty design through their mere inclusion.

[81] "Corpus law" basically refers to a legal system that is based on written laws and statutes. In this context, laws and legal principles are primarily derived from established legal texts, statutes, and codified rules. *See* https://www.law.cornell.edu/wex/corpus#:~:text=Corpus%20is%20a%20Latin%20word,which%20the%20trustee%20is%20responsible.

[82] Wolfgang Alschner & Dmitriy Skougarevskiy, Mapping the Universe of International Investment Agreements, 19 *J. Int'l Econ. L.* 561, 588 (2016).

[83] Schill, Stephan W., and Kerem Gülay. "Approaches to Foreign Direct Investment in Legal Research," published in Markus Krajewski and Rhea T. Hofmann (eds.), *Research Handbook on Foreign Direct Investment* (Edward Elgar 2019), chapter 2 (2019).

[84] For an assessment of investment arbitration on the investment treaty design: A. Van Aaken, International Investment Law Between Commitment and Flexibility: A Contract Theory Analysis, 12 *J. Int'l Econ. L.* 507, 538 (2009).; K. Vandevelde, A Comparison of the 2004 and 1994 US Model BITs: Rebalancing Investor and Host Country Interests, *Yearbook on International Investment Law & Policy*, 2009, 283.

The increasing availability of extensive datasets and the advancement of computational methods have facilitated the rise of computational analysis in the field of investment law. This approach involves leveraging computational techniques to analyze vast amounts of text-based data. Researchers use text as data analysis to scrutinize BITs to unveil trends and patterns within their provisions.[85] Furthermore, text analysis can be applied to investment arbitration awards to discern patterns in the interpretation and application of investment law principles. For instance, it enables researchers to quantify changes in the behavior of ISDS actors over time, revealing significant shifts and citation patterns that often cannot be solely attributed to treaty modifications.[86] This text as data analysis method has proved invaluable for uncovering nuanced insights into the dynamics of international investment law.

1.3.3. Critique of Methodological Approaches to International Law and International Investment Law in Turkey

Turkish literature on international law and IIL is extensive and reflects the country's legal traditions and academic preferences. There are different ways in which some recurring themes and trends can be identified. A positivist legal theory is one approach used in Turkey, which emphasizes the formal sources of international law, such as treaties[87], custom, and judicial decisions, in creating and enforcing international legal norms. In interpreting and applying international legal rules, this approach prioritizes legal texts and institutions such as courts and tribunals. Another approach is a more critical and interdisciplinary approach[88] that considers the social, economic, and political contexts in which international legal norms are developed and implemented.

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[85]] Wolfgang Alschner, Dmitriy Skougarevskiy & M. Wang, Champions of Protection? A Text-as-Data Analysis of the Bilateral Investment Treaties of GCC Countries, 2016 *Int'l Rev. L.* 3, 5 (2017).

[86] Runar Hilleren Lie, The Influencers of International Investment Law: A Computational Study of ISDS Actors' Changing Behavior, 23 *Ger. L.J.* 350, 375 (2022).

[87] G. Albayrak & B. Gültekin-Albayrak, Uluslararası Hukukta Uluslararası Teamül Kurallarının Antlaşmalar ile İlişkisi, 9 *Sakarya Üniversitesi Hukuk Fakültesi Dergisi* 273, 292 (2021).

[88] J.L. Dunoff & M.A. Pollack, *International Law and International Relations: Introducing an Interdisciplinary Dialogue, in Interdisciplinary Perspectives on International Law and International Relations: The State of the Art* (New York: Cambridge University Press, Forthcoming 2012), *Temple University Legal Studies Research Paper Series*, 18.

The literature covers a wide range of topics, including international human rights law, international criminal law, international trade law, and IIL. Some of the prominent Turkish authors in the field of international law include Prof. Dr. Hüseyin Pazarcı, Prof. Dr. İbrahim Kaya, Prof. Dr. Mesut Hakkı Caşın, and Prof. Dr. Meltem Sarıbeyoğlu Skalar. Their publications cover various aspects of international law, such as the role of international organizations, state responsibility, sustainable development, and the application of international law in domestic courts. In the area of IIL, Turkish scholars have also made significant contributions, particularly in the context of investment arbitration. Their publications cover various aspects of IIL, such as investment protection[89], investor-state dispute settlement[90], and the impact of investment treaties on domestic regulation.[91] "An Inquiry into the Turkish 'School' of International Law",[92] offers a comprehensive examination of Turkish literature on international law and IIL. It echoes my analyses of Turkish literature on international law and IIL. Aral's article emphasizes the existence of a positivist approach in Turkish international law scholarship, which values formal sources of international law and legal texts. Overall, Turkish literature on international law and IIL reflects a diverse range of perspectives and diversity continues to evolve over time, contributing to the global development of these fields.

This study aims to collect, analyze, and make sense of vast amounts of unstructured data, including legal texts, offering the potential to transform legal research. What is particularly interesting is the absence of such research in Turkish legal literature, despite the gradual adoption of computational methods by legal scholars. This study seeks to bridge that gap by introducing computational methodology to the Turkish legal landscape, a critical endeavor given its interdisciplinary potential.

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[89] Aydoğmuş, Ayşe. "İki Taraflı Yatırım Anlaşmalarındaki En Ziyade Müsaadeye Mazhar Millet Kaydına İstinaden ICSID'e Başvuru İmkanı." *Milletlerarası Hukuk ve Milletlerarası Özel Hukuk Bülteni* 29 (2009): 21-84.
[90] K. Pınar, Future of the Investor–State Dispute Settlement Mechanism in the European Union After the "Achmea" Decision and "Opinion 1/17", 40 *Public and Private International Law Bulletin* 1507, 1534 (2020).
[91] Y. Çalışkan, Uluslararası Yatırım Hukuku Bağlamında Kanal İstanbul Projesi, *Uluslararası Hukuk Perspektifinden Kanal İstanbul Sempozyumu*, 6 Mart 2018.
[92] Berdal Aral, An Inquiry into the Turkish 'School' of International Law, 16 *Eur. J. Int'l L.* 769, 785 (2005), https://doi.org/10.1093/ejil/chi137.

1.4. Computational Analysis of Bilateral Investment Treaties

In legal studies, the computational methods are very effective in providing prediction of outcomes.[93] The computational analysis of BITs involves using data and algorithms to analyze the content and the impact of investment treaties on the related outcomes.[94] However, the best text analysis method depends on the task. This study instead focuses big corpus of investment agreements and their protective features. The model is to set its own standards in the protection of investments by preparing BITs. Legal content analysis using conventional methods is becoming increasingly unprepared to handle the expansion of legal material. Reading and comprehending the more than 3000 investment treaties and the growing number of investment awards has practically become impossible. As a result, it is important to try fresh ways to understand and evaluate resources on IIL. Such a novel strategy is promised by computational analysis of IIL. Computational systems possess the capability to meticulously sift through extensive document sets without experiencing fatigue, and they excel in uncovering data patterns that humans would overlook.[95] It is undeniable that robotic legal professionals are far from replacing human researchers in the near future. To overcome the new scale to investigations, empirical scholars in the social sciences increasingly tend to the semi or fully automated content analysis as part of the emerging field of "text as data" research.

Keyword based textual analysis involves using a predefined set of words ("dictionary") to identify and extract information from a given text. It uses the code clustering algorithms to identify groups of countries with similar BIT provisions and to identify which provisions are most commonly included in these agreements. It mainly for keyword analyses of a text or corpus. This can be used for tasks such as sentiment analysis, where the presence of certain words in a text can indicate a positive or negative sentiment, or topic classification, where the presence of certain words can indicate the topic of the text. This method can be effective, but it can also be limited by the specific keywords included in the dictionary, and the context in which they are used in the text. The new form of a reading, computational analysis, provide different interpretation levels. The

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[93] E. Kantorowicz-Reznichenko, Computational Methods for Legal Analysis: The Way Forward? 14 *Erasmus L. Rev*. 1 (2021).
[94] J. Bonnitcha, *Assessing the Impacts of Investment Treaties: Overview of the Evidence* (International Institute for Sustainable Development, 2017).
[95] Runar Hilleren Lie, "Treaty Influencers: A Computational Analysis of the Development of International Investment Law," 26 *J. Int'l Econ. L.* 500, 524 (2023).

question of this study is that how the BITs of Turkey has evolved over time. While the computational analysis serves as a powerful tool to identify patterns and changes in the BITs, but it is the combination of computational analysis and doctrinal research that enables a more nuanced and complete answer to the question of how these treaties have evolved over time.

1.5.Practices of Turkey and Standpoint

The agreement signed with Germany in 1962 is the first bilateral investment agreement to which Turkey is a party. ICSID convention entered into forced for Turkey on April 2, 1989.[96] As of August 6, 2022, the number of bilateral investment agreements to has reached 132. The majority of these agreements were signed in the 1990s and although the rate of increase decreased in the 2000s, the trend remained. Among the countries with which Turkey has signed agreements are both economically developed and developing countries. The comparison of all the agreements to which it is a party with all the investment agreements in the world is the subject of this study, and the basic comparison of Turkey's model bilateral investment agreements and model investment agreements is also included. In principle, it has been prioritized that these agreements, which Turkey has mainly concluded to attract foreign investors, are advantageous and encouraging for investors. The agreements that Turkey has been a party to so far generally consistently follow the examples of classical BITs. Starting from the first examples of bilateral investment agreements, the widely accepted framework standard features are as follows.

BITs entered into by Turkey tend to have similar, if not identical, provisions regarding the definition of who is to be considered an investor and what types of investments fall within the scope of the BIT concerned. BITs signed by Turkey serve as essential instruments for Turkish entrepreneurs engaged in global investments. These treaties provide a critical framework for safeguarding their investments and associated rights across the world. To date, Turkey has entered into BITs with 98 countries, and a substantial portion of these agreements is presently in effect. This underscores the significant role these treaties play in the protection of Turkish investments on a global scale. The contracting parties comprise all European Union (EU) member states, with the exception of Ireland, and all member countries of the Organisation for Economic Cooperation

[96] Official Gazette of the Republic of Turkey, No. 20011 (URL: https://www.resmigazete.gov.tr/arsiv/20011.pdf).

and Development (OECD), except for Iceland, Canada, Norway, and New Zealand. Turkey also engaged in a dynamic initiative to conclude new BITs and modify the old ones in line with the new developments in global investment law. Turkey's BIT program primarily aims to enhance capital and technology flows between nations and offer protection to both international investors in Turkey and Turkish investors abroad. This protection extends to safeguarding against non-commercial risks, all within the framework of international law.

This study distinguishes itself within the Turkish international law and IIL community on three substantive grounds. Primarily, the study employs methodological approach centered on computational text analysis in the realm of IIL, notably uncommon in the Turkish context. It gives a study a unique character. Moreover, the study applies a comparative analysis encompassing comparisons involving Turkish BITs with both model treaties and those of other nations, contributes as fresh insights to the scholarly discourse. Lastly, the study findings have significant policy implications[97]. The findings have the potential to shape and guide policy decisions and negotiations in the realm of IIL.

CHAPTER 2

EXPLORING TURKISH BITs: DATA, ANALYSIS, AND COMPARISONS

In this chapter of the study, it presents the data analysis and results obtained through the empirical research, with the objective of conducting a thorough analysis of the evolution of Turkish BITs by utilizing computational text analysis. It focuses on understanding how changes in treaty design influence specific provisions within the wider legal and policy framework of IIL. To achieve this, it uses the empirical tools to track and quantify the transformation of investment treaty clauses through three key channels. This section introduces the dataset of investigated treaties (1), applies the keyword (lexicon) based textual analysis tool to these texts (2), and generates the coded data as well as showing the trend of treaty design in general (3).

[97] Policy implication refers to the potential consequences and recommendations that can be drawn from the analysis. In the context of this study, policy implications would involve identifying how the findings and trends in Turkish BITs' design can inform or shape policies and decisions related to IIL and treaties. https://www.collinsdictionary.com/dictionary/english/policy-implications

2.1. The Dataset

Datasets are employed for the purpose of coding, specifically, the dataset of BITs is utilized to discern patterns and trends in investment treaty design. This dataset hinges on three core elements, as previously discussed, encompassing substantive protections, exceptions, and dispute settlement mechanisms. The empirical approach undertaken here involves assessing each of the three clauses for BIT variation to device their effectiveness in accounting for the substantial differences among BITs. This study primarily relies on a dictionary method for the examination of treaty provisions. One of the most noteworthy contributions of this study lies in its departure from mere speculation about differences between the two countries and its actual codification of the primary sources of treaty design variance. This codification captures diverse trends within a collection of over two thousand agreements, encompassing multiple facets of substantive and procedural regulations and heavily drawing from the extensive body of legal literature on investment agreements.

Despite strong reasons to believe otherwise, the current empirical literature on BITs continues to treat investment treaties as homogeneous.[98] BITs exhibit a high degree of textual uniformity, stemming from their roots in the multilateral aspirations and approaches outlined in the 1967 OECD Draft Convention.[99] In fact, BIT scholars[100] frequently agree that agreements differ in potentially undefined ways. Upon closer examination, BITs differ in various ways, including the evolving preferences of each signatory to the BIT provisions.[101] As a result, the study's significant contribution is to identify and systematically codify significant treaty design differences between treaties. A custom codebook has been precisely developed for the specific objectives of this study. This codebook comprises a dictionary that scrutinizes the provisions and design of BITs to assess the impact of the treaty language on investment protection. This analysis is conducted through a combination of quantitative and qualitative analytical tools.

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[98] Todd Allee & Clint Peinhardt, "Evaluating Three Explanations for the Design of Bilateral Investment Treaties," 66 *World Pol.* 47 (2014).
[99] Stephan W. Schill, *The Multilateralization of International Investment Law*, Vol. 2, 69 (Cambridge University Press, 2009).
[100] Well-known BIT scholars and experts in this field may include: *Prof. Zachary Douglas, Prof. Karl P. Sauvant, Prof. M. Sornarajah and Prof. Jeswald W. Salacuse.*
[101] Cree Jones + & Weijia Rao ++, "(Un)stable BITs," 47 *Yale J. Int'l L.* 247 (Summer, 2022), available at https://advance.lexis.com/api/document?collection=analytical-materials&id=urn:contentItem:662K-W7X1-F016-S3DX-00000-00&context=1516831.

Notably, international law literature underscores the presence of fundamental components within investment treaties. Scholars such as Dolzer and Schreuer have highlighted the existence of common "principles of International Investment Law (IIL)," while Montt[102] characterizes the universe of BITs as a system encompassing thousands of investment treaties, each exhibiting substantive provisions formulated in closely aligned terms. In essence, this underscores a notable degree of uniformity in the recurring clauses governing investment protection. The consistency observed across model BITs significantly facilitates the collecting of a comprehensive dictionary encompassing frequently encountered treaty provisions.

For this study, first, I will formulate the original dictionary comprising core investment treaty features relating to three clauses of IIAs: (1) investment protection, (2) exceptions, and (3) investor state arbitration. Second, it provides the results of Turkish-specific data analysis as well as clauses analysis across all BITs. This broad coding approach enables the visualization of the prevalence of specific treaty features and their precence over time. Additionally, it computes cumulative scores, considering the total features within each treaty, as well as separately evaluating their substantive protection and exception, and procedural arbitration components. These coding results allow to produce fine-grained comparisons between investment treaties.

It includes the general pre-steps and techniques involved in computational legal analysis. Data is composed from all BITs and the Turkish ones. These are obtained from the UNCTAD's and EDIT legal databases. It mainly follows the steps which are respectively acquiring the documents (existing corpus/electronic source/undigitized text), preprocessing (creation of a text corpus and text pre-processing), formatting the corpus according to the research objective, preparing the codebook (dictionary), visualizing word presence. It gathers data from all investment agreements that are publicly available before September 22, 2022. It is vital to see that the exclusion of some investment treaties was necessary as they were not publicly available.

The initial step involves web scraping to acquire unstructured data and download its content. It's worth noting that the website explicitly prohibits web scraping, particularly for the investment treaty table. Consequently, the data can only be accessed by altering the user settings.

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[102] Santiago Montt, *State Liability in Investment Treaty Arbitration: Global Constitutional and Administrative Law in the BIT Generation* (Bloomsbury Publishing, 2009).

Once all BITs are successfully downloaded, the treaty texts undergo conversion into machine-readable formats to facilitate subsequent analysis. These scores are then employed empirically to trace the presence or absence of treaty features that reflect each country's treaty practices. Within this study, each defined clauses in the BITs are represented as columns, and their recurrence is denoted as rows within a matrix, with each entry indicating the presence of a specific keyword in the document. However, the raw scores are insufficient for examining the evolution of Turkish BITs. Thus, an additional step is undertaken to parse the text, and represent the data visualization.

2.1.1. The Dictionary of Treaty Provisions

Keyword (lexicon) based textual analysis, as outlined by Monroe, Colaresi, and Quinn rely on the selection of specific keywords to code documents into predetermined categories.[103] The dictionary method is a subset of keyword (lexicon) based textual analysis, where specific words are predefined and used to classify or analyze text, while keyword-based textual analysis encompasses a wider range of applications and is not limited to predefined word lists. Dictionary methods are perhaps the most intuitive and easy to apply automated method.[104] A dictionary of treaty provisions consists of a collection of various terms and clauses commonly found in treaties. In the realm of textual analysis, dictionary method which, is one of the primary methods for text classification, offer distinct advantages and considerations. After the initial keyword selection, the text documents are processed to detect the presence or absence of these keywords. This technique allows for both quantitative and qualitative analysis. Quantitatively, it involves counting keyword occurrences, assessing their proximity, and understanding their distribution within the documents. Qualitatively, it entails examining the context and relationships between keywords, thereby providing a more comprehensive understanding of the text's content and meaning.

The primary goal of this Turkey-focused study is to identify significant change trends among the concepts used in treaties. This study applies the dictionary method as a subset of keyword (lexicon) based textual analysis which is essential for achieving the research objectives.

[103] Burt L. Monroe, Michael P. Colaresi, and Kevin M. Quinn, "Fightin' Words: Lexical Feature Selection and Evaluation for Identifying the Content of Political Conflict," 16 *Pol. Analysis* 372, 403 (2008).
[104] Philip J. Stone, Dexter C. Dunphy, and Marshall S. Smith, "The General Inquirer: A Computer Approach to Content Analysis" (1966).

By utilizing a predefined dictionary, the study can effectively classify and evaluate specific text components in a consistent and replicable manner as well as ensure the precision and consistency of the results. The analysis comprises from the keywords which includes the substantive clauses, the exclusion and the dispute resolution categories. The list of words contains substantive protections; expropriation without compensation, fair and equitable treatment, full protection and security, national treatment, most favored nation treatment and, exceptions; essential security exception, general public policy exception, prudential carve-out, and the dispute settlement; state-state dispute settlement, investor state dispute settlement. *(Figure 2)* The established list of keywords, consisting of 34 terms and encapsulating 10 distinct treaty features, serves as the foundation for analyzing the language of investment treaties. This comprehensive dictionary, comprising key terms, is implemented in the analysis of the dataset of BITs using the Python programming language.

Figure 2: *Coded treaty features: substantive, exception and arbitration categories and clauses*

Category	**Clauses**
Substantive Protection	Expropriation Without Compensation
Substantive Protection	Fair and Equitable Treatment
Substantive Protection	Full Protection and Security
Substantive Protection	National Treatment
Substantive Protection	Most Favored Nation Treatment
Exception	Essential Security Exception
Exception	General Public Policy Exception
Exception	Prudential Carve-Out
Dispute Resolution	State-State Dispute Settlement (SSDS)
Dispute Resolution	Investor State Dispute Settlement (ISDS)

In the application of the dictionary method, this study employs a binary coding system, marking the presence of a feature with a “1” and its absence with a “0”. This binary approach is adopted instead of frequency counts because the research questions are centered around the existence of particular treaty features within Turkish BITs, not the multiplicity of such features. This binary coding reflects the binary nature of legal provisions in treaties – they either exist or do not within a given document – and is more aligned with the legal analytical framework where the presence of a clause can be a decisive factor in the interpretation of treaty obligations. Frequency counts, while providing depth in certain contexts, may not offer additional insights into the legal impact of the provisions studied, as the mere presence of these clauses is sufficient to confer or deny rights and obligations. Thus, binary coding is conceptually appropriate for assessing the adherence to or deviation from model treaty standards and for evaluating the presence of contemporary investment treaty norms within Turkish BITs.

2.1.2. Treaty Design

The analysis of the investment treaty design is central to this study. The study employs distinct filters to generate the results. By utilizing a set of predefined provisions in the dictionary, the aim is to assess the extent to which the treaty design patterns in Turkish BITs diverge from or align with those found in other BITs. It relies on the UNCTAD[105] and EDIT[106] dataset which contains 2829 BITs by quantifying the keyword (lexicon) based textual analysis. The primary source of BIT full texts is website of the UNCTAD which features more than 2000 English-language treaties continuously verified with the United Nation Member States. It then complements this data set with more additional features which exclusively available at Clause Tracker and Country Comparator that are exclusive to EDIT. As a result, it gathers 2122 treaty texts spanning from 1959 (Germany–Pakistan BIT) to 2022. To the best of our knowledge, this is the largest data set of BITs texts in the literature.

The coding results are used to reflect the treaty design in two ways. To begin, it calculates how many treaties features per category are included in a given treaty and compare this figure across treaties. It compares them in larger categories such as protection, exception, and arbitration. Secondly, the study employs a cumulative scoring system to device the overall scope of a treaty. It calculates the cumulative score encompassing all treaty features, as well as the separate cumulative scores for its substantive components (protection and exceptions) and procedural component (arbitration). Because of the differences in representation of these two analyses, it facilitates a nuanced understanding of their design characteristics and scope.

[105] U.N. Conference on Trade and Development [hereinafter UNCTAD], (URL: https://investmentpolicy.unctad.org/international-investment-agreements/countries/42/china), (URL: https://investmentpolicy.unctad.org/international-investment-agreements/countries/214/t-rkiye). *See* the Investment Policy Hub at UNCTAD is a project that assists policymakers, government officials, and other IIA stakeholders in reforming IIAs so as to make them more conducive to sustainable development and inclusive growth. https://investmentpolicy.unctad.org/international-investment-agreements/countries/214/t-rkiye

[106] *See* another text database of international investment agreements; *(URL: https://edit.wti.org/document/investment-treaty/search).*

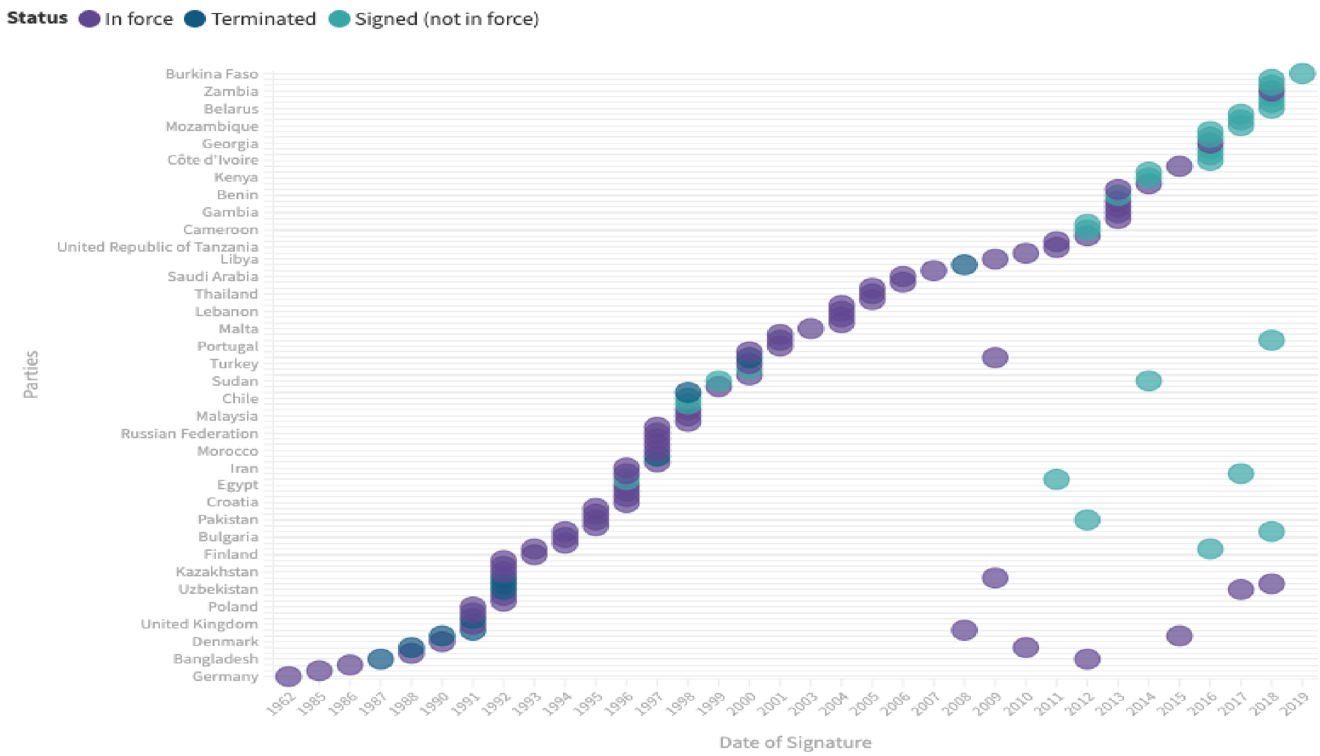
Further to that, it enables the exploration of the individual country BIT practice through the application of text as data analytics to treaty corpus. On a technical level, the code is structured based on the dictionary approach enables the prediction which is tried to base on power asymmetry theory and deeper understanding of the outcome. In the context of this study, 16 model BITs are analyzed to identify the major trends. This model BITs corpus contains more than 73,319 words and 2,854 unique word forms.

2.2. Computational Legal Analysis of Turkish BITs

This research uses binary variables to indicate the presence or absence of specific features within BITs, reflecting the intent to scrutinize the significance of each clause being included or omitted. This is predicated on the notion that the frequency of a treaty feature's appearance does not necessarily equate to its legal significance. Binary coding is employed to mirror the binary nature of treaty provisions' legal effects: they are either in effect or not. This method allows for a precise evaluation of Turkish BITs, aligning with the actual structure and operational use of these legal agreements.

Figure 3 categorizes treaties according to their status, which includes in-force, terminated, and signed but not in force agreements. It offers a chronological representation of the presence and status of BITs from 1959 to 2022.

Figure 3: *Appearance of Turkish BITs between 1959 and 2022*



Note: *The figure displays treaties based on their status as in force, terminated and signed but not in force.*

There are key observations and trends indicated in the graph. In terms of ratified BITs, the graph indicates that Turkey began with a conservative approach but gained momentum starting from the 1990s. The graph shows the existence of BITs, prompting inquiries into the specific countries associated with the terminations. In total, there are 16 instances of terminated treaties. The data reveals a concentration of these terminations occurring within the period spanning from 1987 to 1998. These terminated BITs encompass diverse parties, including nations such as Singapore, China, Russia, Uzbekistan, Kuwait, and Bangladesh.[107] This diversity across participating countries prevents the evaluation of regional and developmental trends pertaining to BIT terminations.

[107] *See* Turkey- Singapore BIT (2008), China BIT (1990), Russian Federation BIT (1990), Uzbekistan BIT (1992), Kuwait BIT (1988), Bangladesh BIT (1987).

The proliferation of BITs, as analyzed by Elkins, Guzman, and Simmons,[108] can be ascribed, at least in part, to conventional economic considerations. The economic characteristics and political landscape of host countries also play a role in the proliferation of BITs, which gain value in environments where political risks are a prevailing concern. For example, Turkey signed and ratified multiple agreements, suggesting an increasing commitment to international investment in 1992. The graph suggests that there was a significant surge in ratifying BITs after the 12 September coup in Turkey. As detailed by Ziya Öniş,[109] Turgut Özal's investment policy during his was characterized by economic liberalization, an emphasis on attracting foreign investment, export promotion, and privatization. The period witnessed a significant increase in BITs as part of Turkey's strategy to secure and protect foreign investments. The political and economic climate during Özal's era played a crucial role in promoting foreign investment and integrating Turkey into the global economy.

In the broader context, the appearance of Turkish BITs between 1959 and 2022 has been marked by both a growing quantity of agreements and a maturation in terms of the content and scope of these treaties. Turkey has actively engaged in investment treaty negotiations as part of its broader economic and diplomatic strategies. Between 2000 and 2011, there is a distinctive concentration of in-force treaties in the timeline presented in Fig. 3, signifying a particular phase in Turkey's investment policy. During this period, Turkey actively promoted and implemented numerous BITs, indicating a robust commitment to international investment relations.

The graph highlights that Turkey has signed numerous BITs since 2014, but many of them have not been ratified or put into force. An example is that the treaties signed with countries-Gambia, Cameroon, Tanzania- in 2014 are concentrated in the category that has not been put into force. Out of a total of 132 BITs that Turkey has entered into, a significant proportion, specifically 34 of them, have been signed but are not yet in force. Even more noteworthy is the fact that the majority of these non-in-force treaties, precisely 30 of them, were signed in the post-2000 era. This observation highlights a prominent trend in Turkey's approach to BITs, where a substantial number of agreements have been signed but not implemented, and this trend appears to have intensified

[108] Zachary Elkins, Andrew T. Guzman, and Beth A. Simmons, "Competing for Capital: The Diffusion of Bilateral Investment Treaties, 1960-2000," 60 *Int'l Org.* 811, 846 (2006), (URL: http://www.jstor.org/stable/3877848).
[109] Ziya Öniş, "Turgut Özal and His Economic Legacy: Turkish Neo-Liberalism in Critical Perspective," 40 *Middle East. Stud.* 113, 134 (2004), (URL: http://www.jstor.org/stable/4289930).

since 2011. Interestingly, it is worth noting that the majority of the countries with which these unsigned treaties are from the African states.[110] Likewise, Uche Ewelukwa[111] points out that out of the thirty-one BITs Turkey has concluded with African states, only a small number are in force, which aligns with the notion that many treaties remain unsigned or unimplemented. Additionally, most of Turkey's BITs with African countries are fairly recent, with the majority being established in the last ten years.

2.3. Dynamic Changes in Investment Treaty Features

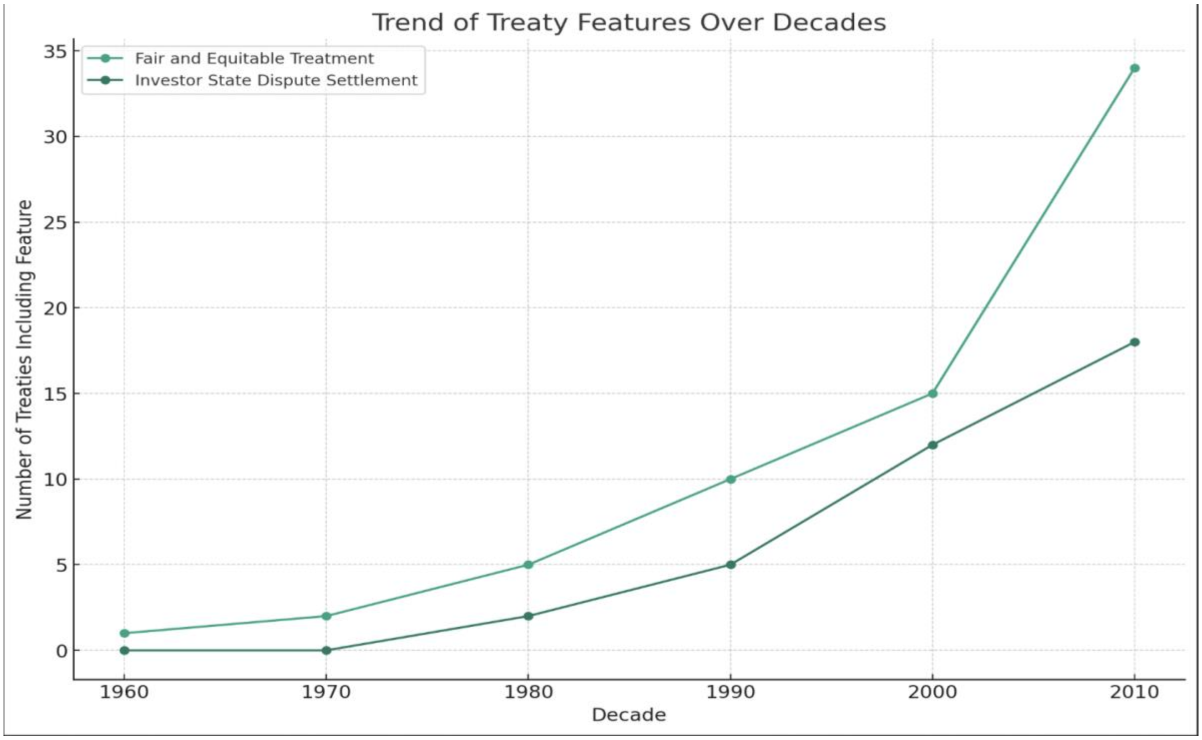
This section delves into the changing features of Turkish BITs, highlighting the trends in substantive protections and dispute resolution mechanisms, and situates these within the context of global trends in investment treaties.

Category	**Features**	**Total Contained in Treaties**
Substantive Protection	Fair and Equitable Treatment, Full Protection and Security, National Treatment, Most Favored Nation Treatment, Expropriation Without Compensation	52/120 34/120 19/120 4/120 1/120
Exception	Essential Security Exception, General Public Policy Exception, Prudential Carve-Out	2/120 2/120 0/120
Dispute Resolution	Investor State Dispute Settlement, State-State Dispute Settlement	30/120 25/120

A detailed examination of Turkish BITs reveals a significant focus on substantive protections for investors, with features such as fair and equitable treatment and full protection and security being prevalent. It shows that out of the treaties examined, 135 contain provisions for FET, while 39 treaties provide for FPS. Such provisions underscore the commitment to creating a stable and predictable legal environment for foreign investors.

[110] *See* Turkey-Mauritania BIT (2018), Mali BIT (2018), Cambodia BIT (2018), Burkina Faso BIT (2019), Angola BIT (2021).
[111] Uche Ewelukwa Ofodile, "Emerging Market Economies and International Investment Law: Turkey-Africa Bilateral Investment Treaties," 52 *Vand. J. Transnat'l L.* 949.

In addition to substantive protections, Turkey has shown a growing inclination towards formalizing dispute resolution processes. The incorporation of ISDS mechanisms in 30 treaties is indicative of a move towards allowing investors to seek redress directly through international arbitration, rather than solely through diplomatic channels or the host state's domestic courts. This facilitates a more direct and potentially impartial dispute resolution process. The inclusion of state-state dispute settlement mechanisms in 25 treaties also indicates a commitment to resolving disputes between contracting states through legal avenues, providing a formal process for the interpretation and enforcement of treaty obligations.



The feature that has seen the greatest change over time in Turkish BITs, as illustrated by the line graph you've shared, is the inclusion of Fair and Equitable Treatment (FET) provisions. The trend indicates a substantial increase in FET clauses, especially from the 1990s onwards. This reflects a strategic shift towards strengthening investor protections in Turkish investment treaties. Investor-State Dispute Settlement (ISDS) provisions also show a significant upward trend. While they were not included in earlier treaties, their presence has grown steadily over time. This demonstrates Turkey's evolving commitment to providing investors with institutionalized avenues for dispute resolution.

Comparing these trends with global practices, the increase in FET provisions aligns with a universal trajectory towards ensuring fair and equitable treatment of foreign investors. This reflects a shared international objective to safeguard investor rights and foster a conducive environment for investment. The adoption of ISDS mechanisms by Turkey also mirrors a global trend towards institutionalizing dispute resolution processes. While it is challenging to ascertain precisely how Turkey's adoption of these mechanisms compares numerically to other states without specific global data, it is evident that Turkey's investment treaty practices are in step with broader international trends.

In other words, the evolution of Turkish BITs, characterized by an increasing incorporation of substantive protections and dispute resolution mechanisms, signifies a maturation of Turkey's approach to international investment agreements. This progression not only enhances the legal predictability and security for investors but also aligns Turkey's investment treaty regime with global standards. The alignment of Turkey's BIT features with international trends reflects a commitment to adhering to best practices in investment treaty design, thereby reinforcing Turkey's position in the global investment landscape.

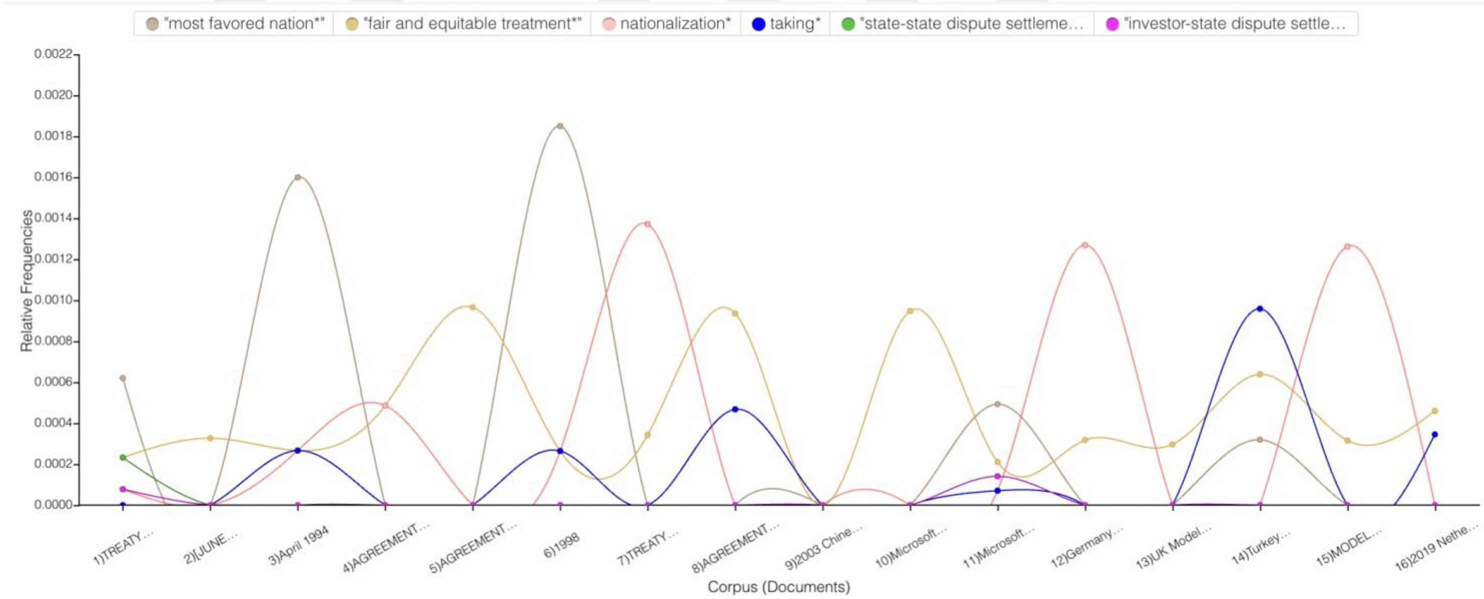
2.4. The Comparison of Turkish BITs with the Model BIT Countries

While there is no universally standardized model BIT, many countries, especially those with extensive experience in international investment, have developed their own models. For a clearer assessment of whether specific investment clauses are incorporated into the treaties, rather than how often they appear. In Figure 4, it contrasts the presence of certain investment clauses in sixteen model BITs, representing a range of treaties enacted between 1991 and 2019 from various countries known for their robust investment frameworks, including Germany, the UK, the US, Switzerland, the Netherlands, and China.

This binary approach underscores whether clauses pertaining to “most favored nation,” “fair and equitable treatment,” “nationalization,” “taking,” “state-state dispute settlement,” and “investor-state dispute settlement” are included in the treaties. These clauses are central to the architecture of BITs, shaping the investment environment by balancing the interests of the investor and the host state.

The graph showcases the distribution of specific investment-related clauses across a selection of sixteen model bilateral investment treaties (BITs) developed by various countries between 1991 and 2019. Each line represents the presence of a particular clause within these treaties, demonstrating the binary inclusion (1 for presence and 0 for absence) of each clause across the sampled documents. The vertical axis reflects the binary status of clauses within the treaties, indicating their presence within the respective legal framework of each country at the time of the treaty's formulation.

Figure 4: *Standard protections, and arbitration clauses appearing in the sixteen (16) Model BITs*



Note:[112] *1)1991 Germany, 2)1991 UK, 3)1994 US, 4)1995 Switzerland, 5)1997 Netherlands, 6)1998 Germany, 7)1998 US, 8)2000 Turkey, 9)2003 Chinese, 10)2004 Netherlands, 11)2004 US, 12)2008 Germany, 13)2008 UK, 14)2009 Turkey, 15) 2012 US, 16)2019 Netherlands*

The data suggests that certain provisions, such as the "most favored nation" and "nationalization" clauses, are consistently incorporated across multiple model BITs, pointing to their importance in the architecture of international investment agreements. The prominence of these clauses in the treaties, as illustrated by their sustained presence, indicates a shared understanding of their necessity for providing a stable and secure legal environment for investors.

112 Because the code could not refer to specific treaty names, each was provided in the note.

Particularly for Turkey, the graph demonstrates how its model BITs, appearing in the later years of the timeline, reflect the country's alignment with global investment treaty standards. The Turkish model treaties indicate a strategic approach to international investment law, incorporating essential protections and arbitration mechanisms to bolster investor confidence and ensure parity with international practices.

By benchmarking Turkish BITs against those of other influential economies, it can be seen how Turkey has positioned its investment treaty practices in relation to global norms. The graph's data helps contextualize Turkey's standing within the broader scope of international investment law, providing a snapshot of how the country's treaties resonate with or diverge from the standards set by other model BITs.

Fig.4 indicates that the most favored nation and nationalization clauses are notably more prevalent across these treaties compared to the other clauses. This suggests that these specific treaty provisions related to the most favored nation and nationalization have been widely adopted and utilized within the examined treaties. The increase in the use of nationalization clause is most radical among them. The feature tells the expropriation. Notably, the inclusion of the "most favored nation" clause reached its peak in the 1994 US and 1998 Germany agreements. The highest point in the graph represents the 1998 German BIT which employs most favored nation clause with distinct characteristics. The German model incorporates the most favored nation obligation alongside national treatment, emphasizing that investments should receive treatment at least as favorable as the host country's own investors or those of third states. [113] It is noteworthy that the period just after the end of the Cold War set up important rules for international investments. The fall of the Soviet Union and a subsequent shift towards market economies in Eastern Europe, which have influenced the design of BITs at that time. It focused on fair treatment (most favored nation) and creating official ways to solve conflicts. This perspective is supported by Bello and Holmer which trade and investment agreements tend to be negotiated after newly capitalist enterprises in those nations have first established ties with foreign businesses. This showed that there was a

[113] OECD, "Most-Favoured-Nation Treatment in International Investment Law," *OECD Working Papers on International Investment*, 2004/02 (2004), OECD Publishing, http://dx.doi.org/10.1787/518757021651.

deliberate effort to make investment rules more predictable and consistent for creating a stable investment environment when the world's economy was changing a lot.

Post-2000 illustrates an obvious diversification in BIT structures, mirroring the heterogeneous nature of global economic relations. It's interesting to note that the inclusion of the “fair and equitable treatment” clause remained consistent in the 1998, 2004, and 2012 US BITs. This consistency proposes a stable approach by the United States toward protecting foreign investors and ensuring a certain level of treatment. As Kantor points out that the Obama administration accommodated few, if any, of the changes demanded by critics of investment treaty arbitration during the BIT review process. As a result, the 2012 U.S. Model BIT closely resembles its 2004 predecessor with little deviation from its established framework.[114]

The Chinese model BIT was established in 1998; however, it presents a unique challenge for analysis due to the unavailability of a downloadable PDF or access to its contents. The 2003 Chinese BIT is a unique case with a binary score of 0 for key clauses, which could indicate a different investment policy approach at that time, prioritizing state regulatory authority over traditional investor protections. It reflects an earlier era when China was less open to foreign investment which more focused on safeguarding its regulatory authority and control over foreign investment within its territory.[115]

The graph clearly indicates that the 2009 Turkish model represented a substantial advancement in highlighting the principles of nondiscrimination within its BITs. The binary presence of the “taking” clause underscores Turkey's commitment to principles of equity and legal certainty in the investment environment. Such an inclusion is indicative of Turkey's approach to harmonize with international norms while ensuring predictability for investors. In the era following the year 2000, Turkey's trajectory in BIT development has been characterized by a binary adoption of modern protections and dispute resolution mechanisms, aligning with global trends while catering to its unique economic and legal context. The presence of clause related to “fair and

[114] Mark Kantor, "The New US Model BIT: 'If Both Sides Are Angry with You, You Must Be Doing Something Right'," *Message from the Chair* (2012): 47.
[115] K. Davies, "China Investment Policy: An Update," OECD Working Papers on International Investment, 2013/01 (2013), *OECD Publishing*, http://dx.doi.org/10.1787/5k469l1hmvbt-en.

equitable treatment” and “most favored nation” in Turkey's model BITs parallels the developments in other states, pointing to a convergence in the design of investment agreements.

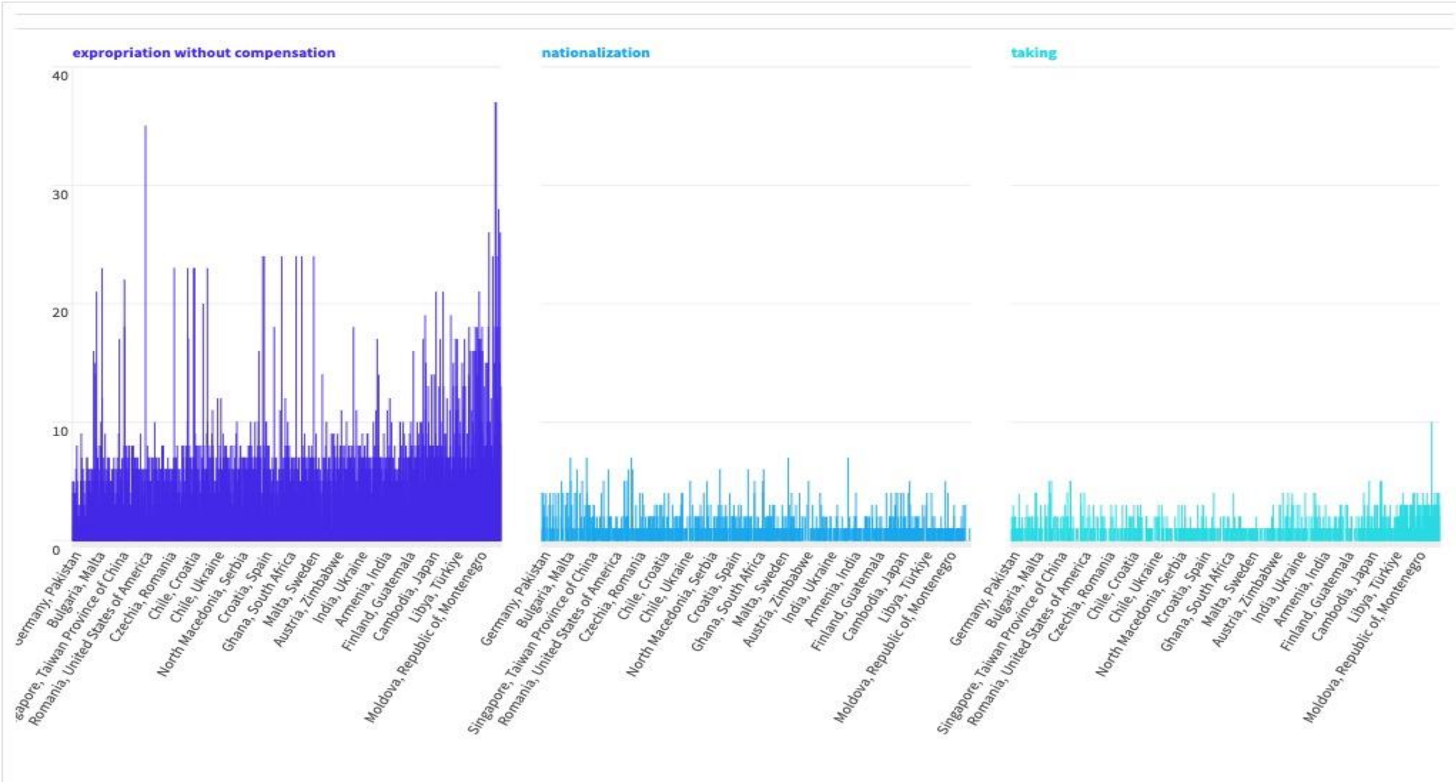
This evolution in Turkish BITs, particularly evident in the 2000s, highlights a shift away from traditional models towards embracing updated provisions that address contemporary issues such as sustainable development and environmental concerns. This proactive approach demonstrates a strategic enhancement of protections offered to foreign investors, distinguishing Turkey's BITs from earlier iterations and showcasing its resolve to foster a favorable investment climate in line with evolving international investment protection paradigms.

Overall, the analysis of Figure 4 through a binary lens offers a distinct perspective on how international investment law has been shaped by different countries over time. It showcases Turkey's proactive stance in treaty-making, aligning its BITs with global norms while also paving its own path in the international investment landscape.

2.5. Examining Specific Provisions: Expropriation Without Compensation, Nationalization, and Taking

Figure 5 is the portrayal of the evolution of protection clauses across the BITs from 1959 to 2022. The graph's focus on "expropriation without compensation," “nationalization,” and “taking” clauses demonstrates the international community's heightened sensitivity to investors' rights. The terms “expropriation,” “confiscation,” and “nationalization” are often used interchangeably, even though they may carry distinct meanings.

Figure 5: *Evolution of the protection clause; expropriation without compensation, nationalization, taking clauses appearing in all BITs between 1959 and 2022*



Note: *The figures depict protection clauses based on the year they were first included. Expropriation without compensation, nationalization, and taking are the three categories of features. The percentage of clauses found in investment treaties is indexed.*

The use of these terms is subject to context and can have nuanced connotations, which makes them somewhat elusive to define precisely.[116] In the context of investment disputes concerning property expropriation, it is common to use the terms "expropriation" and "taking" interchangeably to denote the same concept, as highlighted in the *Starrett Housing Corporation v. Iran* case.[117] Some international investment agreements, including the German model treaty, the UK model treaty, and the 2004 and 2012 US model BITs,[118] all address the concept of expropriation in a manner that equates it with nationalization. They emphasize that investments shall not be subject to direct or indirect expropriation, nationalization, or measures equivalent to

[116] William Harvey Reeves, "Expropriation, Confiscation, Nationalization - What One Can Do about Them," 24 *Bus. LAW*. 867 (1969).
[117] Iran-United States Claims Tribunal: Case Concerning Starrett Housing Corporation. et al. and the Government of the Islamic Republic of Iran, et al. (Expropriation of Property; Appointment of Expert to Determine Amount of Compensation; Expert's Terms of Reference) (1984), *International Legal Materials*, 23(5), 1121, doi:10.1017/S0020782900031041.
[118] *See* UK Model Treaty, Art 5(1), 17 German Model Treaty, Art 4(2), US Model BITs, Art 6(1).

expropriation or nationalization. This trend aligns with the principles of legal certainty and nondiscrimination, foundational to the investment regime.

The figure shows the presence of such clauses is indicative of a legal framework that recognizes and responds to the complexities of international investment. Early Turkish BITs, mirroring global trends of their time, often lacked comprehensive investor protections, reflecting a period of economic nationalism and state-building where host states retained considerable powers over foreign investments.

From the early BITs of the 1950s and 1960s, which often provided minimal investor protection and allowed for expropriation without compensation under certain circumstances, to the later BITs of the 21st century, which tend to incorporate more safeguards for investors and limit the ability of host states to expropriate or nationalize investments without providing fair compensation. The expropriation without compensation graph exhibits more intensity and higher trends compared to the nationalization and taking graphs. This suggests that the inclusion of clause related to expropriation without compensation have seen more significant changes and developments over time in investment treaties.

The early BITs of the late 20th century, originating in the post-colonial context and a period of intensive state-building, often allowed for greater state to take investments without compensating the owners. This reflected a focus on state power over protecting private investments due to economic nationalism.[119] However, as global trade and multinational businesses grew, there was a change. New BITs began to protect investors more. They set stricter rules for when governments could take investments and emphasized limit the conditions under which investments may be.[120] This graph sheds light on the nature of treaty-making, with later BITs building upon the precedents set by earlier agreements. The evolving language and scope of the clauses reflect a

[119] Kenneth J. Vandevelde, "The Political Economy of a Bilateral Investment Treaty," The *American Journal of International Law* 92, no. 4 (1998): 621–41, https://doi.org/10.2307/2998126.
[120] C. Nyombi, "Investor-State Compensation in the Shadow of the Hull Formula," *International Company and Commercial Law Review* 26, no. 12 (2015): 377-386.

sophisticated interplay between state practice, arbitral jurisprudence, and doctrinal developments in international investment law.[121]

However, contemporary Turkish BITs mark a stark departure from this past. They now systematically include clauses that limit the ability of host states to expropriate or nationalize investments without offering fair compensation, illustrating Turkey's commitment to fostering a secure and equitable investment climate. As international investment law matures, Turkey's impressive portfolio of 132 BITs, closely trailing Germany, underscores its significant role and adaptation to the evolving demands of protecting foreign investments. This ongoing adaptation demonstrates Turkey's modernizing approach, ensuring that its legal instruments for investment protection remain robust and reflective of the dynamic nature of international economic governance.

CONCLUSION & EVALUATION

In advancing the frontier of computational analysis within IIL, this study offers a rigorous empirical assessment of the influence of protection, exemption, and arbitration clauses on the design of BITs. Turkey's BITs reflect a nuanced understanding of international models, displaying both conformity and originality—a duality that provides a unique vantage point on the nation's legal strategies in the investment domain. This research pushes the boundaries of methodological precision, ensuring reproducibility while revealing complex patterns in Turkey's legal positioning within the global BIT landscape. This study transcends traditional qualitative legal analysis by harnessing computational methods to quantitatively dissect legal texts, unveiling the complex interplay of legal provisions in a manner akin to revealing the magician's secrets, demystifying the “magic” of legal complexities.[122] In doing so, it not only contributes to the body of empirical legal

[121] Federico Ortino, *The Origin and Evolution of Investment Treaty Standards: Stability, Value, and Reasonableness* (Oxford, 2019; online edn, Oxford Academic, 20 Feb. 2020), 2020), https://doi.org/10.1093/oso/9780198842637.001.0001, accessed 25 Oct. 2023.

[122] Lee Epstein & Gary King, "A Defence of Empirical Legal Scholarship: A Reply," *The University of Chicago Law Review* 69(1), 191-209 (2002).

scholarship but also raises the bar for methodological rigor and transparency, enabling a profound understanding of Turkey's strategic positioning within the global BIT landscape. Consequently, this study exemplifies the transformative potential of computational analysis in legal research and proposes a new avenue for policy impact and jurisprudential progress in a data-centric world.

A STEP FORWARD

This study's exploration of the evolution of Turkish BITs through computational text analysis introduces valuable perspectives on the international legal landscape. However, it is important to recognize the methodological constraints inherent to this approach. The binary coding system utilized focuses on the presence or absence of dictionary-based provisions within BITs, providing a clear but somewhat surface-level view of treaty contents. This method, while effective for identifying explicit legal norms, may not fully capture the nuanced dynamics and subtleties of treaty negotiations and their broader interpretative context. This choice was made to concentrate on clearly defining legal norms within BITs, rather than delving into the nuanced comparisons between treaties. Another significant reason for not employing similarity analysis in this study was to ensure methodological consistency and manageability within the vast dataset of BITs.

Yet, the realm of empirical legal research in IIL remains largely untapped, with a particular dearth of computational scrutiny applied to treaty-making processes. There's a rich area of treaty-making practices from regions like Asia, Africa, and the Middle East, as well as from entities such as regional organizations, which have yet to be thoroughly explored. These areas present fertile ground for research, laden with historical, country-specific narratives that could greatly enhance our collective understanding of investment treaties.

Furthermore, extending the methodological approach of this study could involve incorporating similarity analysis and machine learning techniques to explore nuanced textual variations and thematic overlaps across different BITs. This advanced analytical framework would allow for a deeper understanding of how specific legal concepts are framed and evolve over time within the corpus of treaties. Additionally, integrating qualitative methods, such as interviews with negotiators or content analysis of negotiation records, could provide richer insights into the strategic considerations behind treaty provisions.

ANNEX

To trace change in treaty content, the study mainly relies on the UNCTAD investment policy hub website using the International Investment Agreements Navigator for the entire universe BITs. It is the most comprehensive collection of English language BIT full texts to date. For the coding procedure 3,364 BITs collected from the website. First, I created the pdfcollect.py file and used the Sellenium library for web-scraping (UNCTAD) to create the excel document with all the information. Actually, this library is used in test systems. It allows to act as a user with the code on browsers. The browser opens a window and does not act on the website according to the codes written. The purpose here is to go to the page where the pdfs are listed with the browser. After the page is opened, the pages are loaded, after the adjustments are made (to pull the type column), first it scrolls to load the whole list. When the table loading is finished, it reads all the data on the web page and transfers it to Excel. I created Python's Pandas library data frame and wrote it with the to.Excel function. (pdfcollect.py)

As the second step, I used the pdf.download.py script. It uses URL.lip.request library in Pandas library. The job of this script is to read the generated data with data.xlxs and download the data-pdfs with the URL in excel. It reads the excel line in turn and after reading it saves the download request result to the file with respond. It was giving an error because it was using the Python library. By changing the user agent, it overcame the download barrier and downloaded 3102 pdfs. The listed 262 agreements do not include the pdf text. The convertpdf.py file is the most complex step. It used multiple libraries. It used the import PyPDF2 - PyPI library to read the text in pdf files. There is also the Pytesseract library. It provides an interface for Python. pdf2image then goes through OCR with tesserract. Next, it manually edits the texts, removing non-essential parts, correcting typos, optical character recognition errors and other mistakes in underlying data sources. It also unifies treaty spelling, converting all British English words into their American English counterparts (e.g. “favour” to “favor”) with the aid of spelling variant pairs from VarCon. It was a convert operation with the pycountry library, we see that it uses two-letter language codes in the pdf lang part of the Excel file. Pytesseract is set to en-eng according to the three-letter International Organization for Standardization (ISO) language standard which allows us to translate current format into readable one. Normally, the agreement navigator includes 33 different language agreements and 2096 English BITs. The method adopted in this study aims to look into all available data. Therefore, by changing the code that included the second language English agreements to the corpus, it got 2121 English agreements in total. It reads (country) data.xlxs, then looks at downloaded pdf files, looks for text on each page with PyPDF2. If any page has corrupted characters, it decides to enter OCR. OCR saves to pdf folder. As a result of OCR, 155 documents out of 3102 files were corrupted. (%2) As a result of this step, we got 2121 English language pdf as downloaded.

This study analyses 2121 agreements and 16 model agreements. Non-English BITs have been left out of the study, mainly because they were requiring extra more steps to dictionary analysis. After the OCR process is completed, it comes to the identification of treaty feature. (Search and reporting part) Using the BITs corpus that is included 2121 English language pdf, it identified treaty features by sorting into the following categories; (1) investment protection, (2) exceptions, and (3) the arbitration process. The list of features (*Figure 5)* is categorized as substantive protections; expropriation without compensation, fair and equitable treatment, full protection and security, national treatment, most favored nation treatment and, exceptions; essential security exception, general public policy exception, prudential carve-out, and the dispute settlement; state-state dispute settlement, investor state dispute settlement. It includes specific keywords associated with each feature. The specific coding is done with the main.py file. This script also has pandas PyPDF2 library and additional text.search library. It allows us to search within a string. It was used to translate the terms given with the slugify library to the filename. (By converting to URL) make PDFs easier to distinguish. It also added the ones that were OCRed before the search script to the entire pdf folder. It ran l as parameter. With the find pdf function in data excel, it finds only the pdfs of that language and adds them to the array. Then it creates a list. pdf.full text and it extracted the full text inside with the PyPDF2 libraries. Text.search returns us as an array. When the length (l) of the array is taken, we get the repetition of the term in the text. It then throws it into the data frame. It produces a match result in all texts and saves it to excel.

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