

RESEARCH ARTICLE

Exploring the Rule of Law in Academic Discourse: Bibliometric Description and Thematic Analysis with the Web of Science Data

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Abstract

The rule of law is a foundational concept of state governance, admired for its ideals but also subject to significant controversy, particularly concerning its precise definition. Given the complexity of this evolving field, both in theory and practice, our article analyzes the existing academic literature on the rule of law. First and foremost, it aims to tackle the research question of what the thematic focus is within the rule of law literature. To accomplish this, the article extracts data from the Web of Science (WoS) and employs a bibliometric analysis that includes topic modeling and network analysis techniques. The article likewise presents a rich description of the field by elucidating its intellectual structure and identifying, among other aspects, key sources, references, and influential authors. This article serves as an invaluable resource for those who are new to the field of the rule of law, providing a concise and comprehensive overview of its complex landscape.

1 Introduction

The term “rule of law” was arguably coined in the 19th century, although the principles and values it aims to promote can be traced back to ancient times (Tamanaha 2012). The rule of law does not have a single, universally accepted definition and is often described as an “essentially contested” concept, implying that any definition would invariably be subject to dispute (Waldron 2002). In the rule of law literature, there is a fundamental divide between those who define this concept more positivistically as strictly referring to the qualities that the law should adhere to (Fuller 1969; Raz 1979) and those who advocate for a broader interpretation, aligning the rule of law with the promotion of certain fundamental rights or a system of justice (Bingham 2011; Dworkin 1988). These perspectives are often

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characterized by their adherence to formal (procedural) approaches versus a more substantive stance on the rule of law (Bedner 2010; Craig 2017).¹

In this article, we refrain from adopting any normative stance on what the rule of law should entail. Instead, we take a step back to examine, in an exploratory and descriptive manner, the growing body of academic literature on the rule of law and pose the following main research questions: (1) What is the thematic focus within the rule of law literature? and (2) How has this thematic focus changed over time? Additionally, we explore descriptive aspects of the rule of law field, including the geographic origins of research in this area and the extent of cross-country collaborations. Furthermore, we elucidate the intellectual structure of the field by identifying key sources, references, and influential authors.

For this study, we extracted data on 10,745 documents from the Web of Science (WoS) by retrieving records in which the expression “rule of law” appears in the title, abstract, or keywords of documents. We rely on WoS for two reasons. First, it is the only major citation index to which our institutions provide full access. Second, its long-standing, curated data and stable metadata are well-suited to the bibliometric and network analysis we conduct. However, we acknowledge the well-known limitations of WoS related to the underrepresentation of non-English language scholarship² and of some disciplines, such as the humanities (Visser et al. 2021), and the incomplete coverage of books, working papers, and grey literature. Scopus, for example, could offer up to 20% more coverage for co-citation analysis than the WoS (Falagas et al. 2008). Crucially, some relevant journals are not indexed by WoS, including EJELs; thus, our findings should be interpreted as describing the WoS-indexed, predominantly Anglophone literature rather than the rule of law scholarship.

Despite these limitations, WoS is able to offer stable and consistent data over time that can be used for comparisons in different disciplines, notwithstanding differences in coverage (Archambault et al. 2009; Harzing and Alakangas 2015). Using this WoS corpus and to meet the research objectives, we employ bibliometric analysis and computational social science approaches, such as structural topic modeling (to map the thematic focus) and social network analysis techniques (to, *inter alia*, examine the connections between the topics and capture the intellectual structure of the field).

We find that the intellectual structure of the rule of law field comprises a community of economists, three distinct legal communities (legal philosophers, US-oriented lawyers, and EU-oriented lawyers), and a diverse group of academics (political scientists, philosophers, and political economists) who serve as a bridge among the other communities. This suggests that the rule of law as an object of study is not confined to lawyers alone and that major contributions exist to this literature outside of law.

Regarding the main research question — namely, the thematic focus of the rule of law and its evolution — our analysis reveals that aspects related to the rule of law and economic growth are the most prevalent in our corpus. Such a dominance of economically oriented topics could be attributed to the specific focus of the WoS dataset, as mentioned above. However, these economics-centered themes are closely followed by theoretical and normative approaches, as well as critical perspectives on the rule of law. Judicial aspects associated with the rule of law are also prominent. Furthermore, we note that the academic

¹ For a concise and empirically grounded account of the evolution of the term rule of law, see Kantorowicz and González-Bustamante (2025).

² It is important to note that our analysis is based on scientific literature published in English and, therefore, is titled towards an Anglo-Saxon understanding of the rule of law. As a result, important non-English contributions — such as those on *Rechtsstaat* (German approach) and *État de droit* (French approach) — are not included.

rigor of this literature is on the rise, as evidenced by the increasing prevalence of terms related to research methodology. Overall, the analysis presented in this article serves as an invaluable resource for those new to the field of the rule of law, providing a concise and comprehensive overview of its complex intellectual landscape as well as thematic adherence and research trajectories.

The article is structured as follows. We begin with a concise presentation of our data and methodological approach. Next, we conduct basic descriptive bibliometric analyses of the corpus of interest and explore the intellectual structure of the rule of law field. The core empirical section then examines the thematic focus of the rule of law field and its evolution over time. Finally, we conclude with a summary of our findings and an outlook on future research directions.

2 Data and Methods

The data for this paper were extracted from the WoS Core Collection dataset, which is produced by Clarivate Analytics. It contains a wealth of data on the world's leading scholarly English-language journals, and less so books, and proceedings in the science, social sciences, and arts and humanities, and it navigates the whole citation network. In general, the WoS is "the world's oldest, most widely used and authoritative database of research publications and citations" (Birkle et al. 2020: 363). However, unlike other datasets, the WoS prioritizes selectivity over comprehensiveness, which likely results in a more limited coverage of scholarly works compared to other resources such as Dimensions or OpenAlex. Furthermore, the WoS demonstrates a disciplinary bias, as publications in law and the humanities are underrepresented compared to those in the hard and possibly also social sciences. These limitations are offset by providing higher-quality data, particularly in terms of citation links (Visser et al. 2021).

In the WoS, we retrieved all records containing the n-gram "rule of law" in the title, abstract, or keywords (search performed on August 6, 2024). The resulting dataset comprises 10,745 documents, of which 9,244 (86%) are academic articles. The remainder includes book reviews, editorial materials, book chapters, and other types of content. We adopt this single-source census rather than a multi-source sampling process for three reasons. First, sampling across languages and venues requires a complete, harmonized sampling frame. To the best of our knowledge, none exists that would allow inclusion without additional selection criteria. Second, our analyses rely on curated cite-reference data and stable metadata, which are not available or straightforwardly interoperable across indexes. Third, a single source maximizes internal comparability. Indeed, the WoS dataset offers a range of metadata from text data (titles, abstracts, authors' keywords) to fundamental details about the authors and their affiliations, lists of cited references, and basic publishing information (e.g., year of publication, journal/source name). In addition to the information contained within the documents, WoS also provides several tailored variables, such as "keywords plus," which are algorithmically generated by WoS to supplement the keywords provided by the authors. Moreover, WoS categorizes each journal into specific academic fields. Notably, 5,800 (54%) of the documents in our dataset were classified under the "Government & Law" field, and 1,371 (13%) were categorized under the "Business & Economics" field.

We used the bibliometrix package for R and its biblioshiny module to compute various descriptive statistics for the entire dataset (Aria and Cuccurullo 2017). We then employed VOSviewer (van Eck and Waltman 2010) to create graphical maps based on network visualizations, illuminating how the literature on the rule of law is organized. These visualizations are rooted in graph theory: each node represents an entity, in our case,

authors or keywords, and the edges indicate relationships such as co-citation or co-occurrence. In co-citation networks, a link between two authors arises when they are cited together in the same article. This approach helps researchers identify distinct scholarly communities, pinpoint foundational authors, and trace the evolution of scholarly lineages (White and Griffith 1981). By contrast, in co-occurrence networks, the links reveal how frequently particular keywords or topics co-appear. Applied to the rule of law, these maps provide a high-level overview of the field, highlighting not only well-established clusters of research but also emergent themes — insights that may be overlooked in more traditional legal scholarship relying on manual review or competing clustering approaches. Crucially, given the main research question of this article, the term co-occurrence network indeed provides an initial insight into the thematic focus within the rule of law field.

For a more in-depth analysis of the thematic trends within the field, we conducted an unsupervised Structural Topic Model (STM) (Roberts et al. 2019; for applications, see also González-Bustamante and van der Zwan 2025; Vandebroucke et al. 2024) on the corpus of abstracts in our dataset. Topic modeling, broadly speaking, is a clustering technique that groups documents by latent topics or themes. STM is especially useful when researchers wish to incorporate contextual information, such as publication date or disciplinary background, into the modeling process. Unlike well-known and popular methods such as Latent Dirichlet Allocation (LDA) (Blei et al. 2003), STM enables us to directly include document-level metadata at the outset rather than in separate post-hoc steps. In doing so, we can investigate, for instance, how the prevalence of a given topic changes over time, considering the temporal dimension (studies published before or after 2010) or differs between legal-philosophical and other academic subfields. For a legal scholar examining the rule of law, this means we can gauge how specific topics gain or lose prominence across different periods or disciplinary lenses. By integrating bibliometric mapping with STM, we thus gain a complementary perspective that not only visualizes the field's structure but also indicates the nuanced evolution of core concepts in the rule of law scholarship.

To support transparency and reuse, we released a repository with the complete analysis scripts, configuration files, and specifications used in this study.³ Because WoS data are proprietary, we cannot redistribute records and therefore cannot guarantee strict data-level reproducibility. We mitigate this constraint not only by publishing the exact preprocessing script but also by releasing the entire data pipeline, including descriptives and STM estimation. We also provided machine-readable metadata that enables other researchers to rerun the pipeline end-to-end or adapt it. The code is open-licensed for reuse and is data-agnostic, allowing replication of the workflow.

3 Basic Description

3.1 Key Authors and Publications

Based on the WoS extracted dataset, we record the increasing volume of documents on the rule of law at an annual growth rate of 7.4% between 1956 and 2024. We acknowledge that this increase is driven both by the likely growing popularity of research on the rule of law concept and by the characteristics of the WoS data. Specifically, certain collections do not cover the entire time period, as they were introduced gradually and later incorporated into the WoS Core Collection (e.g., the Book Citation Index was introduced only in 2005).

³ This repository can be accessed via: <https://github.com/RoL-project/bibliometric-analysis-rule-of-law>.

In total, the dataset includes 10,745 documents originating from 2,740 distinct sources, including journals and books. Table 1 highlights the 20 most prevalent sources. Top-ranked, with 216 (2%) documents, is the *Hague Journal on the Rule of Law*, specifically dedicated to exploring the concept of the rule of law. Other significant sources, like *Frontiers of Law in China*, *Osteuropa*, and the *International Journal of Constitutional Law*, include over 50 documents. With 48 documents, the *German Law Journal* ranks fifth among the top (in terms of the number of documents) sources of the rule of law knowledge. These main sources and other sources listed in Table 1 emphasize that discussions on the rule of law extend beyond strictly legal considerations to encompass developmental and transitional (economic and political) issues.

Table 1. The most prevalent sources of documents on the rule of law.

| Sources | # Articles |
|--|------------|
| HAGUE JOURNAL ON THE RULE OF LAW | 216 |
| FRONTIERS OF LAW IN CHINA | 58 |
| OSTEUROPA | 53 |
| ICON-INTERNATIONAL JOURNAL OF CONSTITUTIONAL LAW | 50 |
| GERMAN LAW JOURNAL | 48 |
| TEORIA Y REALIDAD CONSTITUCIONAL | 46 |
| SOCIAL SCIENCES IN CHINA | 45 |
| UNIVERSITY OF TORONTO LAW JOURNAL | 44 |
| INTERNATIONAL AFFAIRS | 43 |
| LAW AND DEVELOPMENT REVIEW | 42 |
| COMMON MARKET LAW REVIEW | 41 |
| SUSTAINABILITY | 41 |
| EUROPEAN LAW JOURNAL | 40 |
| DEMOCRATIZATION | 39 |
| QUAESTIO IURIS | 38 |
| AMERICAN BAR ASSOCIATION JOURNAL | 37 |
| INTERNATIONAL JOURNAL OF HUMAN RIGHTS | 37 |
| LAW AND SOCIAL INQUIRY | 36 |
| EUROPEAN PUBLIC LAW | 35 |
| TOMSK STATE UNIVERSITY JOURNAL | 35 |

Going beyond sources, Table 2 lists authors with the highest publication counts within our dataset. Leading (top 5) in this aspect are scholars like Simplice A. Asongu, Ernst Ulrich Petersmann, Dmitry Kochenov, Stefan Voigt, and Martin Krygier, who have made a large number of contributions. By adopting a more nuanced, fractionalized measure of publication count (see the note to Table 2 for an explanation of fractionalized counts), the ranking of top authors shifts slightly, notably including David Dyzenhaus among the authors

with the highest number of publications. Of note is the diversity among the top scholars — they range from those focused on development and institutional economics (Asongu and Voigt) to legal studies (Petersmann, Kochenov, Krygier, and Dyzenhaus). This underscores the multidisciplinary nature and approaches towards the rule of law research.

Table 2. The most prevalent sources of documents on the rule of law.

| Authors | # Articles | Authors | Articles Fractionalized |
|---------------|------------|---------------|-------------------------|
| ASONGU S | 36 | PETERSMANN EU | 20 |
| PETERSMANN EU | 20 | ASONGU S | 16.45 |
| KOCHENOV D | 19 | KOCHENOV D | 12.92 |
| VOIGT S | 14 | KRYGIER M | 12.5 |
| KRYGIER M | 13 | DYZENHAUS D | 12 |
| DYZENHAUS D | 12 | PALOMBELLA G | 10.5 |
| GANI A | 12 | MAY C | 10 |
| PALOMBELLA G | 11 | BURGESS P | 9 |
| DRESSEL B | 10 | GOWDER P | 9 |
| MAY C | 10 | HILDEBRANDT M | 9 |
| BERGGREN N | 9 | SCHEUERMAN WE | 9 |
| BUGARIC B | 9 | GANI A | 8.75 |
| BURGESS P | 9 | CHEESMAN N | 8.5 |
| CHEESMAN N | 9 | ALLAN TRS | 8 |
| COMAN R | 9 | WALDRON J | 8 |
| GOWDER P | 9 | VOIGT S | 7.33 |
| HILDEBRANDT M | 9 | DRESSEL B | 7.17 |
| MOLLER J | 9 | WEHNER B | 7 |
| ODHIAMBO NM | 9 | YEH SS | 7 |
| PECH L | 9 | SWENSON G | 6.83 |
| SCHEUERMAN WE | 9 | BUGARIC B | 6.83 |

Note: The category of author labelled “anonymous” was removed from the table. The fractionalized measure accounts for the fact that documents are co-authored. In line with fractionalized counting, a total score is given only to single-author publications, while a fractional score is given to co-authored papers, whereby the number of co-authors determines the fraction. For example, if there are two co-authors, they both obtain a score of 0.5 each.

Figure 1 delineates the country affiliations of authors contributing to the body of work on the rule of law. The highest number of publications originates from US-based scholars, followed by those from the UK, China, Australia, and Spain. Given this and Canada’s sixth-place ranking, one might reasonably infer that Anglo-American scholarship somewhat dominates the academic discourse on the rule of law. We acknowledge that the predominance of Anglo-American scholarship is, to some extent, a consequence of relying on English-language sources extracted from the WoS dataset. Furthermore, this figure

indicates that the majority (around 87%) of the documents are single-country publications, showcasing that multi-country publications in the rule of law research are uncommon (13% of publications result from international collaborations).

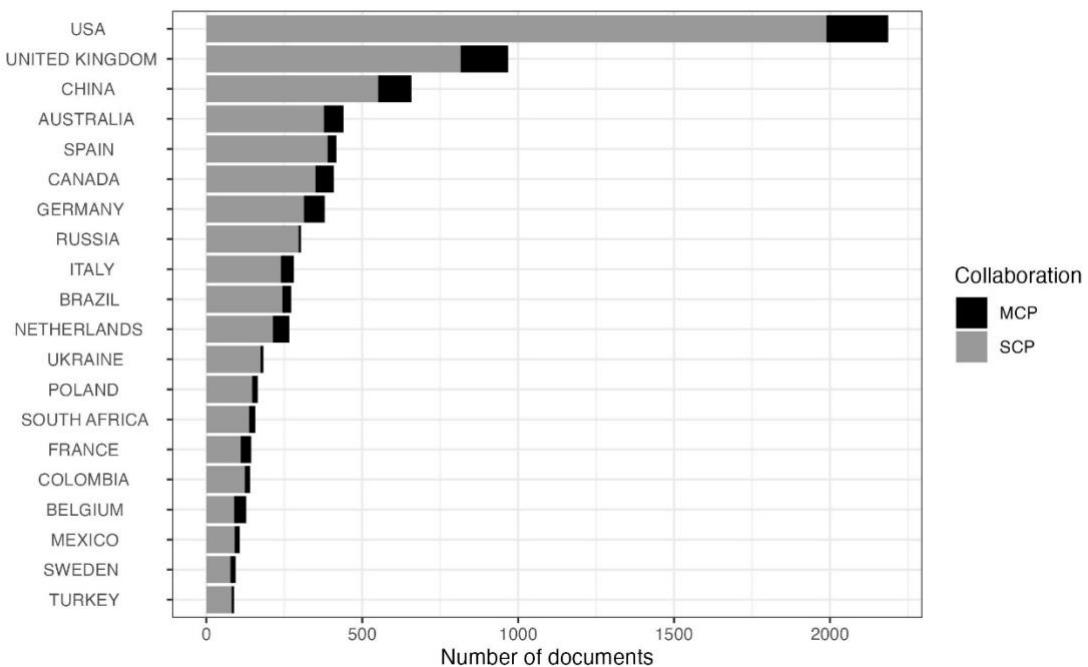


Figure 1. Country affiliations of authors. Note: MCP: multiple country publications; SCP: single country publications.

While publication count is a helpful metric for measuring research impact, citation analysis offers an alternative perspective on the influence and visibility of research within the field. The average citation rate for documents in our dataset is approximately ten citations per document, with each document receiving about one citation per year on average. Table 3 presents the most cited authors and their seminal articles and highlights their significant contributions to the discipline. It is important to note that Table 3 includes authors whose works were identified through a keyword search in the WoS repository. Thus, even though it is comprehensive, this list of authors and their works is not exhaustive. Having this in mind, Daniel Kaufmann, Aart Kraay, and Massimo Mastruzzi emerge as the most cited authors due to their influential paper "The Worldwide Governance Indicators: Methodology and Analytical Issues" published in the *Hague Journal on the Rule of Law* (Kaufmann et al. 2011). This seminal work provides a comprehensive summary of a set of governance quality measures, which are crucial, among others, to understanding and improving the rule of law globally. Benedikt Herrmann, Christian Thöni, and Simon Gächter are also highly cited for their paper "Antisocial Punishment Across Societies," published in *Science* (Herrmann et al. 2008). Their research offers insights into the complexities of rule enforcement mechanisms by exploring counterproductive enforcement behaviors in social norms (punishing people who behave prosocially), which are present, especially in those countries that score low on the rule-of-law adherence.

Additionally, Frederick van der Ploeg's paper "Natural Resources: Curse or Blessing?" published in the *Journal of Economic Literature* (van der Ploeg 2011), is highly influential as it surveys the impact of resource wealth on economic outcomes. It provides a critical perspective on the resource curse hypothesis by arguing that the negative effects of natural resources are particularly evident in countries with weak rule of law institutions.

Among the top 10 most cited authors are furthermore Simplice A. Asongu, known, among others, for his co-authored work entitled "The Role of Governance in Mobile Phones for Inclusive Human Development in Sub-Saharan Africa," published in *Technovation* (Asongu and Nwachukwu 2016); Bo Rothstein, recognized for "What Is Quality of Government? A Theory of Impartial Government Institutions" (co-authored with Jan Teorell) published in *Governance* (Rothstein and Teorell 2008); and lastly Barry R. Weingast for his influential piece, "The Political Foundations of Democracy and the Rule of Law" published in the *American Political Science Review* (Weingast 1997). Asongu's and Rothstein's studies converge in their emphasis on the "good governance" and rule of law aspects, highlighting the interconnectedness of governance quality and developmental outcomes. Weingast's work is fundamental as it introduces citizens and their ability to coordinate as a pre-condition for enforcing democratic and rule of law principles, guaranteeing political stability.

Table 3. Top 20 cited authors of the documents in the dataset.

| Author | # Citations | Most cited publications |
|-----------------|-------------|-------------------------------------|
| KAUFMANN D | 2262 | KAUFMANN D, 2011, HAGUE J RULE LAW |
| KRAAY A | 2238 | KAUFMANN D, 2011, HAGUE J RULE LAW |
| MASTRUZZI M | 2238 | KAUFMANN D, 2011, HAGUE J RULE LAW |
| GÄCHTER S | 1147 | HERRMANN B, 2008, SCIENCE |
| HERRMANN B | 1147 | HERRMANN B, 2008, SCIENCE |
| THÖNI C | 1147 | HERRMANN B, 2008, SCIENCE |
| VAN DER PLOEG F | 1078 | VAN DER PLOEG F, 2011, J ECON LIT |
| ASONGU S | 1014 | ASONGU S, 2016, TECHNOVATION |
| ROTHSTEIN B | 923 | ROTHSTEIN B, 2008, GOVERNANCE |
| WEINGAST BR | 893 | WEINGAST BR, 1997, AM POLIT SCI REV |
| SCALIA A | 878 | SCALIA A, 1989, U CHICAGO LAW REV |
| KNACK S | 862 | KEEFER P, 1997, ECON INQ |
| RODRIK D | 831 | RODRIK D, 1999, J ECON GROWTH |
| TYLER TR | 810 | TYLER TR, 2003, CRIME JUSTICE |
| BROWN W | 794 | BROWN W, 2006, POLIT THEORY |
| ROSE N | 754 | ROSE N, 2000, BRIT J CRIMINOL |
| KEEFER P | 676 | KEEFER P, 2007, AM J POLIT SCI |
| TEORELL J | 637 | ROTHSTEIN B, 2008, GOVERNANCE |
| WALDRON J | 590 | WALDRON J, 2002, LAW PHILOS |
| BELLIN E | 534 | BELLIN E, 2004, COMP POLIT |

An alternative and arguably more accurate method to identify the most influential rule of law scholars and their contributions is to examine the cited references within the documents included in our WoS dataset.⁴ Extracting cited references will allow us to identify which seminal authors form the foundation of this field. According to this approach, presented in Table 4, Jeremy Waldron emerges as the top cited author, particularly for his work "Is the Rule of Law an Essentially Contested Concept (In Florida)?" published in *Law and Philosophy* (Waldron 2002). This publication critically explores the conceptual ambiguities and applications of the rule of law, significantly shaping contemporary legal philosophy debates. The second most cited author, Douglass C. North, contributed profoundly with, for instance, his publication "Institutions" in the *Journal of Economic Perspectives* (North 1991), which examines the role of institutions in economic performance, thereby linking economic outcomes to legal concepts. Daron Acemoglu is noted, among others, for "The Colonial Origins of Comparative Development: An Empirical Investigation," co-authored with Simon Johnson and James A. Robinson, and published in the *American Economic Review* (Acemoglu et al. 2001). This study provides empirical evidence on how colonial strategies in terms of deploying inclusive or extractive institutions have long-term effects on the rule of law and development observed today. Joseph Raz's influential book *The Authority of Law: Essays on Law and Morality* (Raz 1979) studies the relationship between law and moral principles and puts forward the foundational positivist theories of legal authority. Daniel Kaufmann's widely recognized paper "The Worldwide Governance Indicators: Methodology and Analytical Issues", published in the *Hague Journal on the Rule of Law* (Kaufmann et al. 2011), as noted before, offers a methodological framework for assessing quality of governance and rule of law worldwide. Ronald Dworkin's *Law's Empire* (Dworkin 1988) challenges existing legal theories and argues for law as a system of rights. This and other seminal Dworkin's works (e.g., Dworkin 1986), promoting a substantive approach to the rule of law, stand in contrast to Raz's contribution, which is in favor of a more formal and procedural understanding of the rule of law.

Next on the list is Brian Z. Tamanaha's *On the Rule of Law: History, Politics, Theory* (Tamanaha 2004). This book provides a historical and theoretical analysis of the rule of law, traces its evolution and critiques modern misconceptions about the rule of law. Rafael La Porta's notable paper "Law and Finance" (La Porta et al. 1998) co-authored with Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, investigates the impact of legal systems on financial markets. Friedrich Hayek's seminal work *The Constitution of Liberty: The Definitive Edition* examines the relationship between individual liberty and governmental authority, offering an Austrian economics perspective on the role of legal structures and the rule of law. Lastly, Lon L. Fuller's *The Morality of Law: Revised Edition* (Fuller 1969) critically assesses the moral obligations inherent in the law and distinguishes between the morality of duty and the morality of aspiration within legal systems. His work is credited for providing a first-ever list of qualities of rules for them to comply with the principles of the rule of law (e.g., rules should be clear, general and non-retrospective). Fuller's approach to the rule of law was, by and large, procedural. Some refer to this approach as the rule book conception of the rule of law (Dworkin 1986).

⁴ Given the differences in citation styles, it was important to standardize the names of authors and papers to ensure that no duplicates were present. The removal of duplicates was carried out manually.

Examining the cited references within documents in our dataset is an effective method for identifying foundational authors in the field of the rule of law. Additionally, analyzing how these seminal authors and their contributions are interconnected can provide deeper insights. This can be achieved by mapping and analyzing co-citation networks, which is done in the following subsection.

Table 4. Top 20 cited authors identified in references' lists of the documents in the dataset.

| Author | # Citations | Most cited publications |
|--------------|-------------|--|
| WALDRON J | 979 | WALDRON J, 2002, LAW PHILOS |
| NORTH DC | 864 | NORTH DC, 1991, J ECON PERSPECT |
| ACEMOGLU D | 856 | ACEMOGLU D, 2001, AM ECON REV |
| RAZ J | 810 | RAZ J, 1979, AUTHORITY OF LAW |
| KAUFMANN D | 777 | KAUFMANN D, 2011, HAGUE J RULE LAW |
| DWORKIN R | 766 | DWORKIN R, 1988, LAWS EMPIRE |
| TAMANAH A B | 658 | TAMANAH A B, 2004, RULE LAW HIST POLITI |
| LA PORTA R | 655 | LA PORTA R, 1998, J POLIT ECON |
| HAYEK FA | 653 | HAYEK FA, 1999, THE CONSTITUTION OF LIBERTY |
| FULLER L | 642 | FULLER L, 1969, MORALITY LAW |
| HABERMAS J | 612 | HABERMAS J, 1996, BETWEEN FACTS AND NORMS |
| | | ASONGU S, 2016, INT REV APPL ECON |
| ASONGU S | 537 | ASONGU S, 2016, TECHNOVATION |
| | | ASONGU S, 2016, WORLD DEV |
| HART H | 510 | HART H, 1997, THE CONCEPT OF LAW |
| RAWLS J | 475 | RAWLS J, 1971, THEORY JUSTICE |
| SCHMITT C | 468 | SCHMITT C, 2006, POLITICAL THEOLOGY |
| KRYGIER M | 454 | KRYGIER M, 2016, ANNU REV LAW SOC SCI |
| | | SUNSTEIN CR, 1995, CALIF LAW REV |
| SUNSTEIN CR | 438 | SUNSTEIN CR, 2003, MICH LAW REV |
| PECH L | 435 | PECH L, 2017, CAMBRIDGE YEARBOOK OF EUROPEAN LEGAL STUDIES |
| SCHEPPELE KL | 431 | SCHEPPELE KL, 2018, U CHICAGO LAW REV |
| KELSEN H | 418 | KELSEN H, 1967, PURE THEORY LAW |

Note: The category of author labelled "anonymous" was removed from the table. Documents by the European Commission and the World Bank were also highly ranked in the second and sixth place, respectively.

3.2 Intellectual Structure

In bibliometrics, constructing co-citation networks is a common approach to discern communities of scholars and sub-fields within research areas (White and Griffith 1981). Such networks are formed by linking authors frequently cited in the same documents. The strength of these connections is quantified by the frequency of authors' joint citations across reference lists.

These co-citation networks enable mapping the intellectual structure of the field by delineating the main authors and their connections within a field. Figure 2 presents a co-citation network based on our corpus of documents. It identifies five primary communities of rule of law scholars. The most distinct community, shown on the far right in red, primarily includes economists specializing in political economy as well as institutional and developmental economics. Notable scholars included in this group are, among others, Douglass C. North, Mancur Olson, Alberto Alesina, Philip Keefer, Ronald H. Coase, Axel Dreher, Stephan Haggard, Christian Bjørnskov, Geert Hofstede, and Asli Demirguc-Kunt.

On the far left of Figure 2, two overlapping communities consist predominantly of lawyers, legal scholars, and philosophers. One community (marked in blue) includes, *inter alia*, Joseph Raz, Jeremy Waldron, Lon L. Fuller, Ronald Dworkin, Albert V. Dicey, Hans Kelsen, Carl Schmitt, David Dzienhaus, Jürgen Habermas, and Herbert Hart. The second cluster (marked in yellow) features prominent US-based judges and scholars such as Antonin Scalia, Richard A. Posner, Eric Posner, Cass R. Sunstein, Mark Tushnet, and Frederick Schauer. At the opposite vertical end of this cluster is a group of scholars (marked in purple) focused on rule of law issues within the European Union context, including, among others, Laurent Pech, Wojciech Sadurski, Martin Krygier, Kim L. Scheppeler, Gianluigi Palombella, Paul Blokker, Dmitry Kochenov, and Frank Schimmelfennig, alongside nodes representing European institutions like the European Commission, the European Council, and the European Court of Human Rights.

Centrally located and acting as a bridge between other communities is a cluster (marked in green) that includes lawyers and legal philosophers (Brian Z. Tamanaha, Tom Ginsburg, and Randall Peerenboom), democracy and political science scholars (Max Weber, Francis Fukuyama, Adam Przeworski, Gretchen Helmke, Steven Levitsky, Robert Dahl, Larry Diamond, Guillermo O'Donnell, and Alina Mungiu-Pippidi), international relations scholars and think tank representatives (Tom Carothers and Robert O. Keohane) and economists (Friedrich Hayek, James M. Buchanan, Barry R. Weingast, and Thomas Piketty). This central cluster is notably diverse (more heterogeneous) in terms of the disciplines of its members.

In essence, the intellectual structure of the rule of law field comprises a community of economists, three distinct mostly legal communities (legal philosophers, US-oriented lawyers, and EU-oriented lawyers), and a diverse cluster of academics (political scientists, philosophers and economists) who serve as a bridge among these communities. A similar overall intellectual structure emerges when constructing networks based on actual references instead of authors. We report this finding in Supplementary Material (Figure A1).

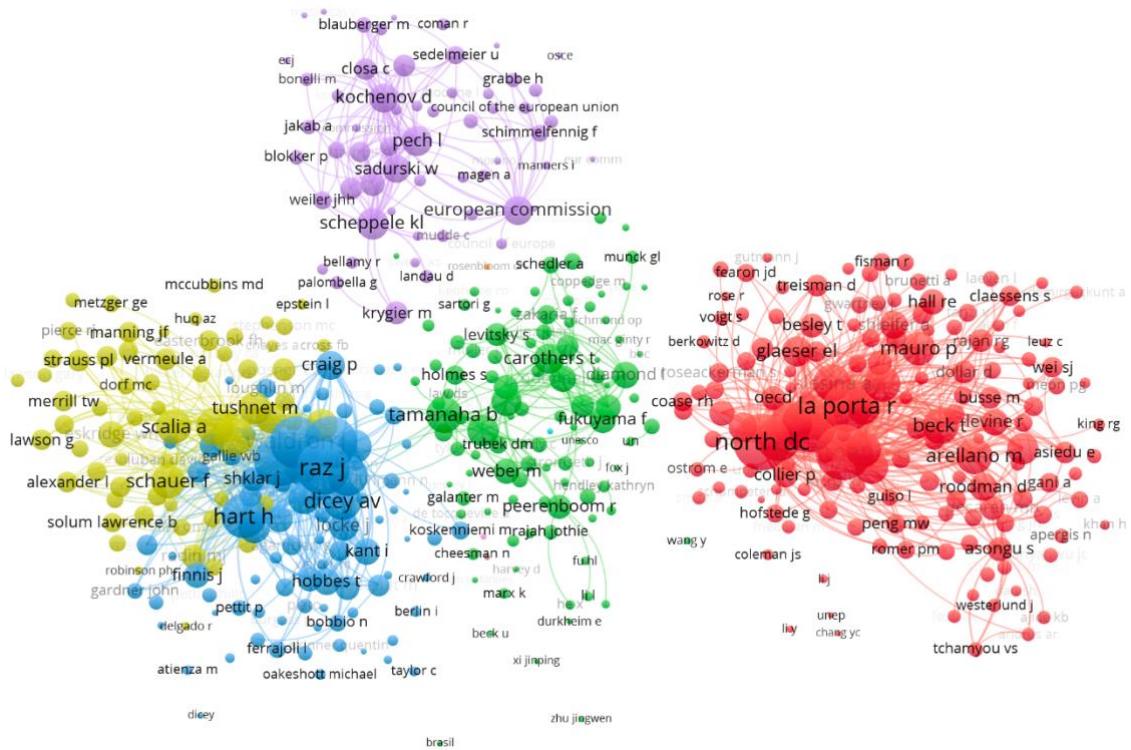


Figure 2. Co-citation network of authors. Note: The size of the nodes reflects total link strength – that is, nodes appear larger when they have more or stronger connections (i.e., thicker or more numerous links) to other nodes in the network. The layout chosen uses the VOS clustering technique with attraction of 5 and repulsion of 0. The association strength is selected for normalizing the strength of the links between items.

The co-citation network can be further constructed based on sources (articles and books), revealing distinct communities of scientific knowledge within the rule of law field. This network is depicted in Figure 3. A notable observation from this figure is the reduced number of identified communities, with three distinct clusters emerging: (1) economics journals, located in the right (blue) cluster; (2) political science, empirical legal studies, and law and society, which form the middle (red) cluster; and (3) law reviews and legal journals, found in the left (green) cluster. As in previous analyses, the most heterogeneous cluster, leaning towards political science as well as law and society/empirical legal studies, is centrally positioned. It acts as a bridge, facilitating interaction between the distinct communities of economists on one side and legal scholars on the other.

Overall, as our 'cartographic' analysis suggests, the rule of law field is not only for lawyers. With several major publications outside the legal scholarship and with two communities outside the law contributing to the rule of law scholarship (political scientists and economists), we, perhaps to some extent, already have the social science of the rule of law, which, as some argue, "does not exist quite yet" (Krygier 2016: 222). Understandably, one would like to see even more interconnections between the various communities and more convergence in terms of their approaches, terminology, and studied phenomena.

While exploring the key scholars and disciplines that shape the development of the rule of law field is insightful in itself, we now shift our focus to our main research question. Specifically, we examine the thematic focus of this research area and how it has evolved over time. The next section delves into this aspect in detail.

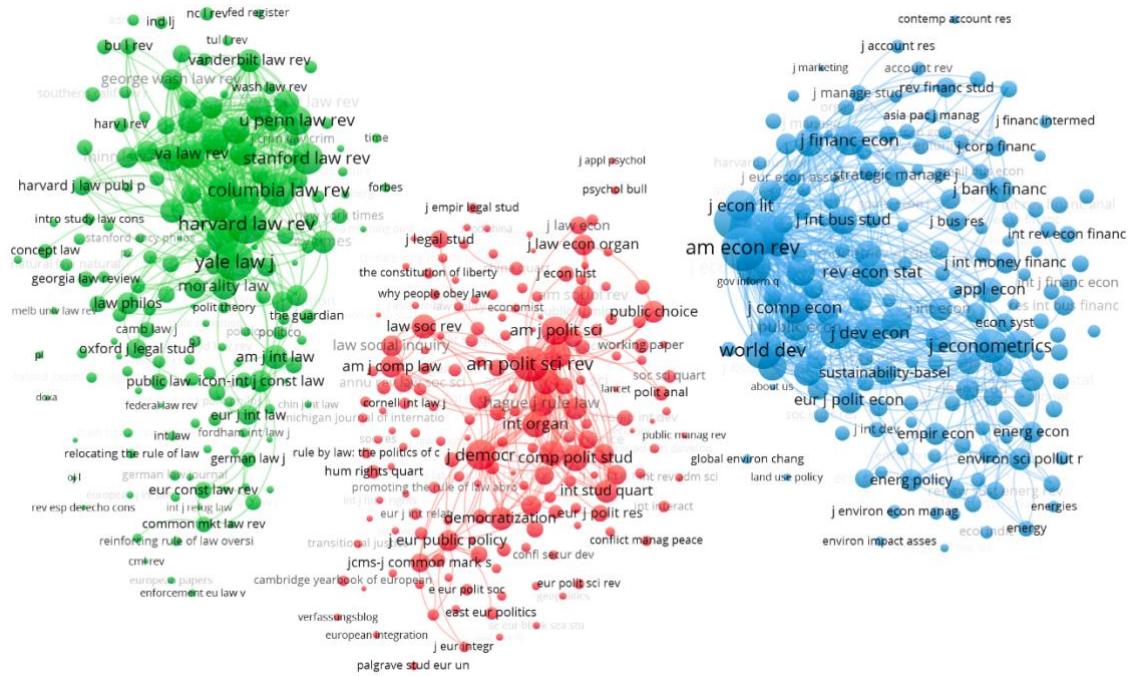


Figure 3. Co-citation network of sources. Note: The size of the nodes reflects total link strength — that is, nodes appear larger when they have more or stronger connections (i.e., thicker or more numerous links) to other nodes in the network. The layout chosen uses the VOS clustering technique with attraction of 5 and repulsion of 0. The association strength is selected for normalizing the strength of the links between items.

4 Topical Focus

We begin our exploration of the thematic focus within the rule of law field by analyzing the co-occurrence network of keywords, as identified by the WoS. Keywords serve as nodes within this network, with their connections and the intensity of these connections measured by the frequency of their joint occurrence. Figure 4 depicts this network, highlighting three major clusters and one smaller cluster. The cluster furthest to the left (marked in blue) is associated with economic concepts such as economic growth, trade, income, incentives, and efficiency. It also includes aspects indicating an empirical focus, such as evidence, determinants, and causality. The central cluster (marked in red) encompasses terms like corruption, democracy, policy, culture, and trust, aligning closely with the political science literature. To the right (marked in green), we find a cluster dominated by legal terminology, including law, justice, court, rights, and adjudication. Below this, a smaller legal cluster (marked in yellow) focuses on US-specific terms like Supreme Court, federalism, constitution, act, and precedent. While this co-occurrence network provides valuable first insights, it lacks granularity and does not allow for measuring the correlation between thematic prevalence and other meta-information of documents. Therefore, we will employ a topic modeling approach to provide a higher-resolution picture of the themes in the rule of law literature and their evolution over time.

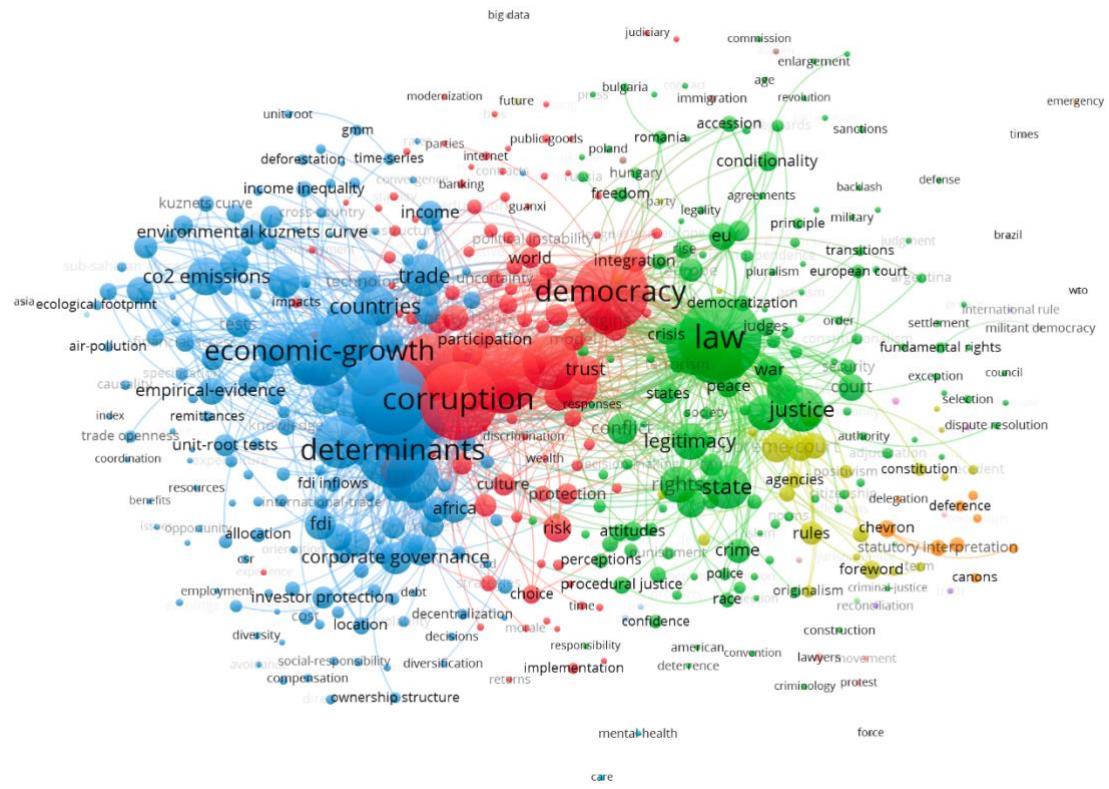


Figure 4. Co-occurrence network of keywords. Note: The size of the nodes reflects total link strength — that is, nodes appear larger when they have more or stronger connections (i.e., thicker or more numerous links) to other nodes in the network. The layout chosen uses the VOS clustering technique with attraction of 5 and repulsion of 0. The association strength is selected for normalizing the strength of the links between items.

To this end, we run the STM on abstracts from all documents in our sample.⁵ A key decision in topic modeling is selecting the optimal number of topics, which is often determined by balancing topic exclusivity and semantic coherence (Grimmer et al. 2022; Roberts et al. 2014). While exclusivity represents the extent to which a topic's dominant terms are distinct from other topics, semantic coherence assesses how frequently the top terms in a topic co-occur in the same documents, reflecting interpretability. After testing models with five to 50 topics, we found that 15 topics struck the best balance between having sufficiently unique keywords per topic and retaining coherent clusters of terms within each topic, as detailed in Figure A2 in the Supplementary Material. In setting the number of topics at 15, it is important to note that all models are run with two covariates. The first covariate categorizes documents into two groups: those published before 2010 and those from 2010 onwards. This enables us to capture the thematic evolution over time. The second covariate identifies whether documents pertain to the scientific fields of law, philosophy, or other fields. We note that in the model, these two covariates form an interaction.⁶

⁵ One should note that the sample used for topic modelling was slightly smaller ($N = 9,071$, 87% of the initial corpus) as those documents which did not provide abstracts were excluded. These were mostly articles published before 1990.

⁶ It should be noted that, before running the STM analysis, the abstracts underwent basic pre-processing, including the removal of all tokens that appeared fewer than five times in the entire corpus. In the STM analysis itself, we set

The primary output from the STM consists of terms associated with 15 distinct topics. Specifically, Table 5 (column 2) lists the FREX terms, which are unigrams that appear frequently (FR) and are exclusive (EX) to each topic. Once these terms are identified, the researcher or other experts in the field are responsible for assigning labels to the topics. Column 1 of Table 5 displays these researcher-assigned labels determined in consultation with a legal expert.

Figure 5 presents estimates of the average topic proportions within the corpus. Notably, the most prevalent topic, accounting for approximately 10% of the corpus, relates to economic growth. The following two most significant topics, each comprising over 9% of the corpus, are associated with theoretical and normative approaches as well as critical perspectives on the rule of law. The fourth most prevalent topic, exceeding 8%, pertains to judicial aspects. At the lower end, we find topics such as "social values" at 5.1%, "constitution-making context" at 4.7%, and "crime and punishment" at 3.5%, representing the least prevalent topics in our corpus. Regarding substantive rule of law issues, "democratic backsliding" appears somewhat more prevalent at 6.9% compared to "fundamental rights" at 5.2%. Beyond the dominant theme of economic growth, we also identify "development and reforms in China" at 7.1% and "trade and investment" at 5.3% as other economically related topics within the corpus.

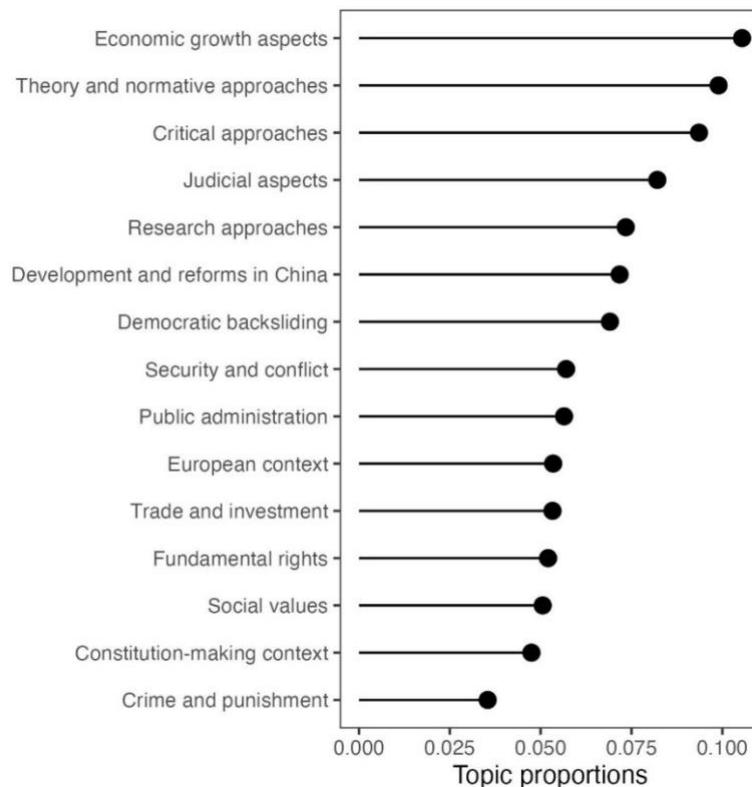
Table 5. FREX words and topics' labels.

| (1) Topic | (2) FREX terms |
|----------------------------------|---|
| Development and reforms in China | china, chines, environment, promot, sustain, global, construct, socialist, ecolog, advanc, develop, system, water, intern, path, core, confucian, build, marin, law |
| European aspects | union, european, europ, eus, russia, land, member, eastern, membership, commiss, japan, balkan, crisi, ukrain, enlarg, forest, asia, crise, treati, region |
| Research approaches | research, knowledg, evalu, methodolog, method, analysi, studi, identifi, qualit, expert, scientif, analyt, compar, profession, field, data, inform, theoretr, scienc, purpos |
| Crime and punishment | hong, kong, crimin, punish, tortur, polic, prosecut, prosecutor, crime, sentenc, penal, prison, offenc, victim, suspect, les, homicid, trial, des, amnesti |
| Theory and normative approaches | interpret, normat, legal, subject, concept, definit, philosoph, philosophi, natur, reason, principl, certainti, norm, element, ration, content, russian, mean, basi, theori |
| Democratic backsliding | elector, democraci, populist, authoritarian, elect, elit, democrat, illiber, regim, backslid, polit, consolid, turkey, parti, politician, autocrat, transit, leader, latin, media |
| Social values | religi, women, citizenship, famili, religion, cultur, gender, school, muslim, educ, christian, univers, speech, class, islam, children, social, life, age, equal |

the random seed to 1,000 and specified the model initialization method as "Spectral", which is typically faster and more stable than random initialization.

Table 5. FREX words and topics' labels (cont.).

| | |
|-------------------------|--|
| Constitution-making | revolut, constitut, german, centuri, spanish, germani, repUBL, parlamentari, referendum, franc, twentieth, assembl, marriag, spain, came, parliament, minist, constitu, separ, presid |
| Economic growth aspects | variabl, estim, emiss, qualiti, gdp, growth, panel, index, capita, incom, fdi, regress, energi, indic, ssa, sampl, inflat, corrupt, per, bank |
| Critical approaches | critiqu, discours, narrat, debat, coloni, scholarship, immigr, contemporari, neoliber, essay, disobedi, contest, frame, read, theorist, book, cosmopolitan, scholar, schmitt, write |
| Fundamental rights | pandem, right, covid-, human, health, protect, guarante, restrict, migrant, fundament, digniti, violat, asylum, oblig, privaci, worker, diseas, ombudsman, freedom, proport |
| Judicial aspects | court, judici, judg, jurisdict, suprem, judgment, arbitr, adjud, judiciari, litig, decis, tribun, discret, statutori, statut, review, disput, remed, defer, immun |
| Trade and investments | firm, tax, corpor, compani, busi, market, enterpris, cost, trade, wto, investor, properti, ownership, commerci, asset, invest, audit, contract, reserv, competit |
| Security and conflict | terrorist, terror, post-conflict, peac, arm, kosovo, mission, secure, militari, war, afghanistan, peacebuild, conflict, civilian, humanitarian, aid, unit, non-stat, nuclear, traffick |
| Public administration | public, administr, agenc, transpar, servic, good, digit, manag, govern, trust, plan, government, bureaucrat, local, account, regul, servant, particip, oversight, municip |

**Figure 5.** Topic proportions.

After investigating global topic proportions in the corpus, we now examine the prevalence of topics across two covariates: the period (documents published before or after 2010) and the source (documents from the field of law and philosophy versus other fields). This analysis serves two purposes. First, it provides empirical evidence of shifts in topics over time and across subfields, which is substantively interesting, even if conducted in an exploratory manner without prior solid expectations. Second, this exercise offers a form of validation for the STM by showing the most expected trends, such as the increasing prevalence of "research approaches" due to generally growing scientific rigor over time and the greater presence of "economic growth aspects" in journals outside the law and philosophy field or greater prevalence of "judicial aspects" in journals from the law-and-philosophy field.

Figure 6 illustrates the proportions of the relevant topic over time and across scientific fields. We begin by discussing considerable shifts (both statistically and practically) over time. Firstly, we observe an increasing prevalence of "research approaches" generally and within fields outside law and philosophy, a notable rise in the "economic growth aspects" topic. In the law and philosophy field, there is an increase in the topics "development and reforms in China" and particularly "fundamental rights". Conversely, we note a decreasing prevalence of topics related to "crime and punishment" and "democratic backsliding" — the latter initially surprising but understandable in the context of Latin America and Turkey, where discussions on "democratic backsliding" predated its commonality in the context of Central and Eastern Europe. It is also worth noting that the topic of democratic backsliding was relatively more prominent compared to other topics before 2010. However, this does not necessarily imply that it was more significant in absolute terms before 2010 than after. As generally, the rule of law literature has experienced considerable growth over time.

Additionally, there is less emphasis on "constitution-making aspects", "critical approaches," and "public administration" over time outside the law and philosophy field. Finally, both fields experience a significant drop in the "security and conflict" topic. Overall, while both fields are becoming more academically rigorous by emphasizing research approaches, they diverge in their thematic focus: law and philosophy are increasingly centered on fundamental rights and Chinese reforms. In contrast, literature outside legal fields leans more toward economic growth.

Focusing on the period from 2010 to 2024, we now systematically discuss thematic differences between fields. As already alluded to, journals in law and philosophy show a more substantial interest in "development and reforms in China," which is driven mainly by area-oriented sources like the *Frontiers of Law in China* journal. Similarly, "European context" and "democratic backsliding" are more prevalent in law and philosophy sources. The law and philosophy field also leads in topics related to "theory and normative" and "critical" approaches, as well as "constitution-making" and "judicial aspects." These last four topics provide an excellent validity check, as one might have expected such a pattern to emerge.

Conversely, in fields outside law and philosophy — predominantly economics and political science — the dominant topics include "research aspects," "crime and punishment," "social values," "public administration," and, predictably, "economic growth" and "trade and investment." In summary, while both fields show an increased focus on methodological rigor, the field outside law and philosophy continues to emphasize these aspects more. The focus on geographical areas such as China and Europe remains predominantly within the legal and philosophical literature, as does the topic of "democratic backsliding." Other patterns are more predictable and thus less noteworthy for further summary.

To conclude this section, it is worth noting that, from 2010 onward, the topics within the research fields — Law & Philosophy and others — began to diverge. It means that, over time, specific topics became more distinctly associated with one field or the other. Notable exceptions are “security and conflict” and “public administration” topics, which show convergence in terms of their prevalence across both fields of research.

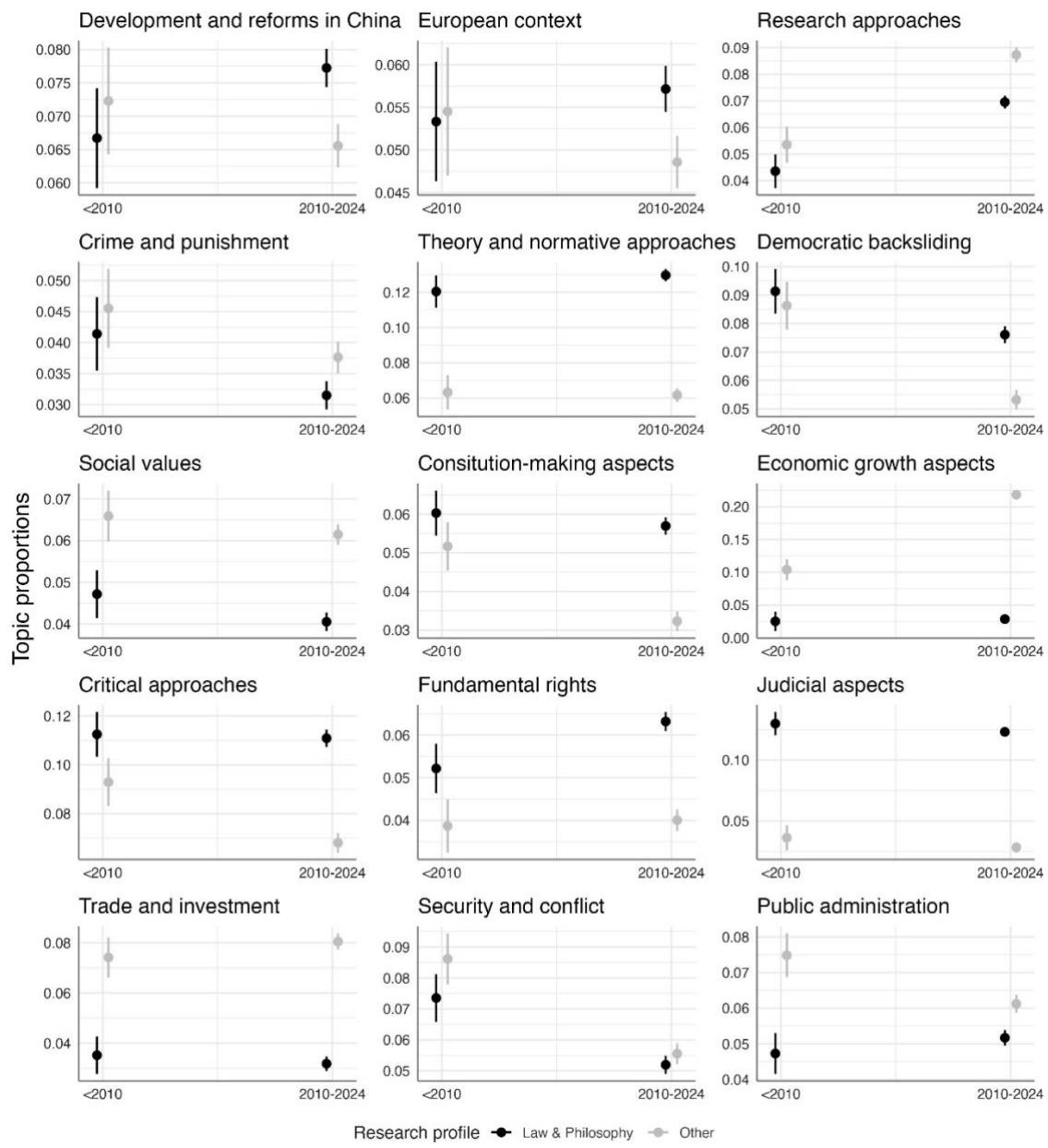


Figure 6. Topic proportions per period and field.

5 Conclusions

This article did not seek to measure the impact of the rule of law on economic performance, an analysis political economists would perform (e.g., Haggard et al. 2008), nor did it explore how voters react to politicians who violate the rule of law, as a political scientist might (e.g., Graham and Svolik 2020). Additionally, it avoided providing a normative perspective on what the rule of law should represent and promote, which is common in legal scholarship (e.g., Loughlin 2024). Instead, this work stepped back from these themes to analyze the expanding body of literature on the rule of law.

Utilizing bibliometric techniques and computational social science approaches, such as social network analysis and unsupervised topic modeling, the article mapped the intellectual structure of the field. We demonstrate the existence of a community of economists, three distinct legal communities (legal philosophers, US-oriented lawyers, and EU-oriented lawyers), and a heterogeneous group of 'bridging' academics, including political scientists, philosophers, and economists. This diversity suggests that the study of the rule of law is not confined to legal scholars alone and receives significant contributions from other academic disciplines.

Regarding the main research question on thematic focus and its evolution over time, we find that the aspects related to the rule of law and economic growth are most prevalent. These are closely followed by theoretical and normative approaches, critical perspectives on the rule of law, and notable judicial aspects. The literature's increasing academic rigor is further evidenced by the growing use of terms associated with research methodologies.

Overall, the insights provided by this analysis are invaluable for newcomers to the field of the rule of law, offering a detailed and comprehensive overview of its complex intellectual terrain and evolving research trends. Future studies in this domain could adopt a more explanatory approach. Following the example of Kantorowicz-Reznichenko and Kantorowicz (2025), researchers might examine whether interdisciplinary work on the rule of law, i.e., studies co-authored by lawyers and scholars from other fields, is associated with greater scholarly impact.

Given the limitations of the WoS dataset, which we acknowledged upfront – specifically, its limited coverage of law journals and reviews – we also recommend supplementing or extending our findings by incorporating additional academic literature from other data sources. Specifically, a detailed analysis of the intellectual structure and, notably, thematic focus within law reviews and legal scholarship could be conducted by extracting information from databases such as HeinOnline. While this first idea for further research suggests concentrating on the legal domain, an alternative strategy could involve exploring more expansive scientific research datasets like Dimensions or OpenAlex. These platforms would allow for the inclusion of working papers and other less curated resources, which are underrepresented in the WoS dataset, potentially broadening the scope of research on the rule of law. One could further think of employing the growing application of Large Language Models (LLMs) for topic detection and classification of documents, instead of the STM applied in the current article.

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Data Availability. We have released a public repository containing the full analysis scripts, configuration files, and study specifications: <https://github.com/RoL-project/bibliometric-analysis-rule-of-law>. Because Web of Science (WoS) data are proprietary, we cannot redistribute the records and therefore cannot guarantee strict, data-level reproducibility. We mitigate this limitation by publishing the exact preprocessing script and by releasing the complete data pipeline, including descriptive analyses and STM estimation. We also provide machine-readable metadata to enable researchers to rerun the pipeline end-to-end or adapt it to their needs. The code is open-licensed and data-agnostic, facilitating reusability of the workflow.

Competing Interests. The authors declare no competing interests.

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