

An Empirical Study on the Federal Law Redundancy Rate — Based on the United States Code

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Abstract. Whether there are too many laws is a perennial debate that has drawn interest from a variety of sources. The quality and rate of exploitation of legislative resources are important determinants of the redundancy rate of legislation. This paper develops an empirical research procedure to determine the legal redundancy rate by statistically sampling the use of legal articles, including two calculation indices, namely usage rate of legal articles judgments and the overall legal articles usage rate, in order to address the question "Are there too many laws". The empirical study's data analysis led to the conclusion that while the overall citation rate for the law is high, the utilization rate for legal articles in actual situations is relatively low and the redundancy rate for legal articles is high. The research also highlights areas where the empirical investigation should be strengthened, such as additional classification of the sample items and content text mining. For the legal community, the general public, and lawmakers, the findings have significant ramifications.

1. Introduction

"If you have ten thousand regulations, you destroy all respect for the law," cautioned Winston Churchill. The question "Are there too many laws?" In the United States, these issues have long been seen from various angles. For instance, The Heritage Foundation has provided some significant data about over criminalization in the US. [1] The article "America has too many criminal laws" was published in *The Hill*, a publication that focuses on political news, in 2012. [2] 2019 saw the blog post "Frequent Reference Question: How Many Federal Laws Are There?" published by the library of congress. Create titles for feature articles. [3] A similar argument was recently made in the *Wall Street Journal*, "America Has Too Many Rules." It is clear that there is more and more legislation, which is receiving attention. This is related to both the value of the rule of law and its zealous pursuit.

The consensus of the twenty-first century era has long been that the rule of law is the least bad type of governance, and that consensus has nothing to do with location, ethnicity, gender, or country. The "rule of law" is crucial as the foundation of the rule of law; the only difference is how it appears in different contexts. Particularly, nations with statute law are more concerned with parliaments passing laws and lawmakers selecting judges, whereas in countries with case law, judges "make the law".

However, parliamentary legislation has a significant influence that cannot be disregarded even in countries that follow case law. Therefore, it is impossible to overstate the importance of legal requirements in the governance of States. Keeping public authorities accountable to their

people is necessary for the rule of law, and "not wasting a penny of taxpayers' money" has emerged as one of the most efficient methods of doing so. Legal articles were the tangible outcome of significant legislative investment and a clear indication of how well-written a nation's legislation was.

2. The deficiency and improvement of existing research

For a long time, the evaluation of the rate of use of legislative resources has been in an ambiguous state, and even legal researchers can only give inaccurate evaluations based on perceptual cognition, such as "too many laws". [4] This study seeks to address the important subject of "Are there too many laws?" which is of significant importance to the general public, the legal community, and members of Congress by using an empirical research design.

Despite the fact that many laws have been passed, they are rarely actually acknowledged in court rulings, which is undesirable for the public, lawmakers, and researchers. It is possible to say that the problem of legal redundancy has two aspects: the use of legislative resources and the quality of those resources. The ability of the law to be mentioned in court decisions to settle disputes, which is undoubtedly its primary and most significant purpose, can be used to determine the redundancy rate of the legal system. On the basis of this, we suggest the legal redundancy calculation index for determining how frequently federal laws in the United States are used.

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At the same time, in practice, whether a law can be used in court decisions is not the only way for Congress to legislate, but also includes the existence of other norms as the basis for the development of the law, but also includes the existence of federal law as the basis for administrative law enforcement, which includes Statutes & Court Rules, Administrative Decisions & Guidance Secondary Sources, Trial Decisions & Guidance Secondary Sources, and the use of the law as the basis for the development of the law. Guidance Secondary Sources, Trial Court Documents, Appellate Court Documents and other forms of use.

In other words, not all issues that arise in reality must be resolved through the legal system. As a result, we also suggest here an evaluation metric for the law's overall adoption rate. The percentage of laws cited in court decisions and the percentage of laws cited in the rule of law community as a whole make up the two dimensions that make up the legal redundancy rate, which are referred to as the rate of use of law judgments and the rate of use of law as a whole, respectively.

To that end, the specific dimension of legal redundancy rate includes the redundancy rate of law judgments and the overall redundancy rate of law, both of which are calculated by subtracting the percentage of the corresponding usage rate from the natural number 1, i.e., the following formula:

Formula A: Redundancy rate of judgments = 1 - usage rate of judgments of statutes

Formula B: Overall redundancy rate of statutes = 1 - Overall usage rate of statutes

A rate of less than 60% is deemed to be highly redundant, a rate of 60% to 70% is deemed to be moderately redundant, a rate of 70% to 80% is deemed to be less redundant, and a rate of greater than 80% is deemed to be exceptionally less redundant. Specifically, we use 60% as the cut-off point for assessing the rate of statute usage of federal laws. These are the clear indicators:

(a) Very high redundancy rate: usage rate of legal texts < 60%

(b) Average redundancy rate: 60% <= usage rate of legal texts < 70%

(c) Low redundancy rate: 70% <= usage rate of legal texts < 80%

(d) Extremely low redundancy: statute usage >= 80%

Accordingly, 40% is able to serve as the cut-off point for assessing the redundancy rate of statutes in federal law, i.e.:

(e) Very high redundancy rate: statute redundancy rate > 40 %

(f) Average redundancy: 30% < redundancy rate of statutes <= 40%

(g) Low redundancy rate: 20% < redundancy rate of statutes <= 30%

(h) Very low redundancy: redundancy of legal texts <= 20 %

3. Supporting from the United States Code

An important question that arises is how to obtain citations of legal articles. Code codification involves the comprehensive use of legislative techniques, which can be generally divided into two basic types, one is as the representative of the civil law system of German law in general, the law along the natural number of the new legislative techniques, the law will be amended in accordance with the order of all the articles of the re-arrangement; the second is the USC as a representative of the arrangement of the law along the natural number of non-re-arrangement, even if the code has to repeal, increase the articles of the common amendment facts occur, the repealed law number is still remains unchanged in the USC. The second is represented by the USC, in which the articles are arranged in natural numbers without rearranging, and even if there are repealed or added articles in the Code, the serial numbers of the repealed articles are still retained in the Code. Both of these codifications have benefits and drawbacks. Simply said, the American Code is easier to follow the changes but harder to read than the German Code, which is easy to read but difficult to follow the process of changes. [5]

For the sake of this study specifically, the USC codification can assist in tracking legal developments, and West law Classic's technology, a legal business database, makes it possible to follow the application of any USC provision.

We calculated the legal redundancy rate by sampling equal proportions of legal texts from the USC, with all operational steps done through West law Classic. [6] The specific steps of the study are as follows:

First, the database's home page was used to get the most recent version of the USC articles, which included data through June 30, 2023. [7] According to statistics, there are 65,078 legal articles in the USC 53 titles, which range from 1 to 54 (Section 53 has been abolished). We next used an online algorithm to determine the total number of samples we would require, which came at 587, based on the fundamentals of stratified sampling. [8] Then, using a Java software that we built, we generated random numbers to divide the 587 samples across the 53 titles for independent sampling. Finally, we checked the West law Classic website for the number of case citations and the total number of citations for each of the sampled legal articles and recorded them in order for the 587 legal articles that were still waiting to be retrieved.

4. Data Analysis

In our sample survey results, we found that out of the 587 legal articles we retrieved, there were 285 that were mentioned in court cases and 456 that were cited by all potential referees. It is important to highlight that there were inconsistencies in the data cleaning process that we counted as missing values because of the enormous amount of data on USC articles. Missing Values in statistical sampling are inevitable data defects. When the missing values are too large, the accuracy of statistical

sampling and the effectiveness of inference results may be affected. In our statistical sampling results, there are 23 instances of missing values in the 587 legal articles selected here, and since the qualified sample size is over 96%, in accordance with the sampling statistics criterion, this sampling is valid.

The data analysis on the sampling results of this study is divided into four parts for discussion, namely, the legal articles judgment usage, the redundancy rate of legal article judgments, the overall used rate of legal articles and the overall redundancy rate of legal articles.

As shown in Table 1, In the 456 cited legal articles, the proportion of the number of legal articles used by judicial cases has exceeded 50%, accounting for 62.5%, accounting for nearly two thirds, and the usage rate of law judgment is not low. However, this is not the case from a different perspective. In the 587 legal articles sampled, there are 285 legal articles used by judicial cases, and the usage rate of legal articles is (285/587) 48.55%, less than 50%. Compared with the 456 legal articles used in the sample data, the judgment rate of the legal articles is not high. Sequential logic, we can calculate the judgment redundancy rate of legal articles in this sample, that is, the proportion of legal articles not used in judicial cases. According to the formula "1-(285/587)", the redundancy rate of legal article judgments is 51.45%.

Table 1. Usage Rate and Redundancy Rate of Legal Articles Judgments

Total sampling of legal articles	587
The total number of legal articles used by the case	285
The total number of used legal articles	456
Usage rate of legal articles judgments	48.55%
Redundancy rate of legal article judgments	51.45%

There are two different concepts between the usage rate of legal articles judgments and the overall usage rate of legal articles. The latter refers to the probability that the sampled law article is used as a reference source such as various publications, judgment documents and government documents such as administrative documents. As shown in Table 2, The The total number of used legal articles is 456, accounting for 77.68% (456/587) in The total sample of 587 legal articles, which indicates that The proportion of legal articles used has reached as much as 3/4. The redundancy rate of the corresponding, the total number of used legal articles is relatively low, only 22.32%, which is calculated by The formula "1-(456/587).

Table 2. The overall Legal Articles Usage Rate and Redundancy Rate

Total sampling of legal articles	587
The total number of legal articles used by the case	285
The total number of used legal articles	456
The overall legal articles usage rate	77.68%
The overall legal articles redundancy rate	22.32%

According to the evaluation criteria we defined in part II, the results of this sample show that the rate of use of

law judgments is <60% and the rate of redundancy of law judgments is >40%, so the redundancy rate of federal laws is high from the perspective of judgments. Since 70% <= overall usage of statutes <= 80% and 20% <= overall redundancy of statutes <= 30%, federal law has a low redundancy rate from the standpoint of overall statute usage.

5. Conclusion

Using an equal-proportional sampling methodology, we looked at references to the United States Code in this document with a focus on references to court cases. By calculating two statistical indicators, namely, the rate of usage and the rate of redundancy, we conclude that: the overall rate of usage of general legal articles is high and the overall rate of redundancy is low; however, from the perspective of judgement, the rate of use of legal articles in the actual situation is relatively low and fails to reach the pass line, and the rate of redundancy of legal articles is relatively high. In other words, from a litigation perspective, the law is indeed being enacted too much, with nearly half of the legal articles not being used in the course of a case.

The reason for presenting such a result may be related to duplicate authorization [9]. Specifically, it is usually because the United States Congress has repeatedly authorized administrative agencies, that is, to grant the same regulatory authority to different administrative agencies. The root cause of this problem lies in the redundant legislative structure within the United States Congress, such as the committee system and the clarity of its jurisdiction. Another possible reason is the duplication of legislation [10], which repeats the institutional provisions and contents between different laws, leading to more and more laws. The last possible reason is that the law is improperly enforced, so that laws are constantly introduced. Lawmakers ignore the improper formulation of the law itself, and they hope that the introduction of a new law to regulate the relevant behavior. For example, some scholars claim that "There are many antibullying state laws and practices in place however its real level impact is ambiguous at best." [11]

It should be mentioned that this paper's experimental planning and analysis should be enhanced. Here, there are two key points. It was unable to identify the differences in legislative strategies between the cited and un cited articles because there was no text-mining of the substance of the sampled articles. This is an area that needs more investigation in the future.

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