# HARMONIZATION OF PANCASILA VALUES IN LEGISLATION USING NATURAL LANGUAGE PROCESSING METHODS

## KHAIRUL UMAM [1], GATOT DWI HENDRO W [2], L. M. HAYYANUL HAQ [3] and MINOLLAH [4]

[1,2,3,4] Faculty of Law, Social Science and Political Science, University of Mataram, Indonesia.
E-mail: [1]khairulumam@unram.ac.id

**Abstract**

This study aims to examine the coherence of Pancasila values in Indonesian legislation. This research falls under normative legal research using the Philosophical Approach, Statute Approach, Conceptual Approach, Historical Approach, and Comparative Approach. The results of this study reveal that the normativization of Pancasila values in legislation is carried out to ensure that the principles and ideals of the nation are reflected and maintained in Indonesian laws and regulations. In the normativization process, Pancasila value indicators function as a tool for validating legislation or legal norms (Pancasila as a tool of validity of norm) by providing a basis for assessing the compliance and coherence of a law or regulation. Using Natural Language Processing (NLP) methods, the results of text similarity tests generally indicate that Indonesian legislation lacks grammatical proximity in terms of both "words" and "terms," as some analyzed regulations still have CountVectorizer or TfIdfVectorizer values far from cosine +1. This also means that these regulations may disregard or even contradict Pancasila values. However, on the other hand, this NLP method also shows that the Human Rights Law (UU HAM) has internalized Pancasila values in the formation of its norms.

**Keywords:** Harmonization; Pancasila, Legislation, Natural Language Processing.

## 1. INTRODUCTION

Norms are rules that regulate, guide, and direct individuals to behave and act ideally in a communal life. [1]Norms can take the form of (i) written legal norms enforced by the power system, (ii) ethical norms that can be either written or unwritten, and (iii) religious norms. Legal norms are usually always written, while ethical norms, which contain interpersonal etiquette, can be unwritten and increasingly written nowadays. Personal ethical norms are usually always unwritten, such as feelings of appropriateness, shame, and pride, which are purely personal and not related to others in social interactions. [2] Religious norms, especially for religions with Holy Scriptures, are written in the scriptures and historical reference books, such as the Sunah Rasul in Islam, which is contained in the Hadith books of Prophet Muhammad. [3]

Regarding legal and ethical norms, both written and unwritten, these can be understood as institutionalized values that are idealized as references for attitudes and behaviors in social interactions within a community or an organized society, including in the context of a nation-state. Norms, therefore, can be understood as the institutionalization of values. Norms or rules that regulate contain values that embody ideas, concepts, attitude orientations, preferences, interests, needs, or dispositions about everything idealized in communal life. [4]When these values are institutionalized into norms or rules, they develop into rules or standards of behavior that regulate, guide, and direct individuals towards idealized, desired, or ultimate goals, which

are intrinsic. The word "norm," according to the Cambridge Dictionary, is defined as "an accepted standard or a way of behaving or doing things that most people agree with." [5]In various studies, the term norm is widely used across all fields of life, such as social norms, cultural norms, economic norms, and political norms.

However, in legal studies, norms are categorized into three types: religious norms, ethical norms, and legal norms. The concept of norms or rules contains values, and as mentioned above, norms are the institutionalization of values into idealized standards of behavior in communal life. According to Kelsen, norms can be assumed as commands as explained by Austin, who characterized law or rules as a command. Specifically, law or rules are a species of command.

A command is an expression of an individual's will, and its object is another individual. [6]Legal rules are binding commands because they are made by a competent authority. A binding command remains binding even if the desire that forms the basis of the command no longer exists. This can be seen in the case of a will, where the command remains binding even if the person who made the will has passed away. The death of the person making the will actually enforces the will. [7]

In the Indonesian context, the fundamental norm of the state (staatfundamentalnorm), which is Pancasila, represents idealized values, making Pancasila the source of all sources of state law. The first and second principles of Pancasila serve as the moral foundation of the state and are sources of mostly unwritten ethical norms.

In relation to religious norms, the first principle of Pancasila provides space for the implementation of religious norms within the state, allowing each individual to practice their religion and beliefs, which is institutionalized in legal norms as stipulated in Article 29 paragraphs (1) and (2) of the Constitution: "The state is based on the belief in the One and Only God," and "The state guarantees the freedom of each resident to embrace their own religion and to worship according to their religion and belief." Thus, in the context of the state, Pancasila is the highest norm. However, in the context of religion, religious norms guide religious practice, making it impossible to contradict state norms with religious norms.

The values of Pancasila institutionalized in the constitution are constructed in state life as the highest foundational document, binding and supreme, both as a source of law and as a source of national and state ethics. Besides the values categorized as fundamental, the remaining can be called instrumental values, which are institutionalized in legal and constitutional ethics norms as outlined in the text of the 1945 Constitution. The text of the 1945 Constitution of the Republic of Indonesia contains many basic values, but among them, there are five fundamental values or principles agreed upon as the constitutional identity of the Indonesian nation and state. [8]

Considering the urgency of Pancasila as the state's fundamental norm (Staatfundamentalnorm), Grundnorm, Rechtidee/Leitstar, Philosophische Grondslag/Weltanschauung, national ideology, and the source of all sources of state law, it can be said that any legislation that does not use Pancasila as a guideline and does not internalize Pancasila values is not valid.

According to experts, the validity of a legal rule is measured by whether the following elements are met: [9]

1. Whether the legal rule conforms to a higher-level rule, ensuring it is not ultra vires (beyond the power).

2. Whether the legal rule is a consistent part (subsystem) of the existing regulatory field.

3. Whether the legal rule aligns with social realities (sociological aspect), making it effectively applicable in society.

4. Whether the legal rule has an inherent tendency to be respected (based on moral and political grounds).

5. Whether the legal rule is part of a transcendental normative reality (ontological aspect).

In the practice of forming legislation, it is often found that lower-level regulations contradict higher-level regulations, or that legislation is not based on higher regulations. Based on Law No. 12 of 2011 on the Formation of Legislation, the content of laws should further regulate the provisions of the 1945 Constitution of the Republic of Indonesia. Government Regulations should contain material to implement laws as appropriately. Presidential Regulations should contain material mandated by laws, material to implement Government Regulations, or material for the implementation of governmental authority. Provincial and Regency/Municipal Regional Regulations should contain material in the context of regional autonomy and assistance tasks and should accommodate specific regional conditions and/or further elaborate on higher legislation. Ideally, higher legislation as the basis for forming lower regulations should reflect Pancasila values in accordance with the principles of forming legislation. However, it is often found that legislation contradicts Pancasila values.

According to Ani Purwanti, Acting Deputy for Legal Advocacy and Regulatory Oversight of the Pancasila Ideology Development Agency (BPIP), there is a potential for legislation, including regional regulations, to contradict Pancasila values. According to Ani Purwanti, there are about one hundred legal products across Indonesia that potentially contradict Pancasila. BPIP's research found 60 legislative products and 40 regional regulations that contradict Pancasila values. [10]

Pancasila as a tool of validity for legislation aims to guide the law towards the legal ideals (rechtidee) of the Indonesian nation, which is to protect all Indonesian people and the entire homeland of Indonesia based on social justice. Legislation can be said to be valid and legitimate if it meets the following criteria: [11]

1. The legal norm must be formulated into various formal rules, such as articles of the Constitution, laws, and other forms of regulations, including international rules like treaties and conventions, or at least in the form of customary practices.

2. The formal rule must be made legally, for example, if it is a law, it must be made by the parliament together with the government.

3. Legally, the legal rule cannot be annulled.

4. There should be no other legal defects in the formal rule, such as not contradicting higher rules.

5. The legal norm must be applicable by law enforcement bodies such as courts, police, and prosecutors.

6. The legal norm must be accepted and obeyed by the community.

The views of legal experts on the validity of legislation can serve as a basis for testing whether legislation is valid or not. For example, whether a regional regulation aligns with the spirit of the nation is crucial as it determines the effectiveness of the law's enforcement in society. Therefore, harmonizing legislation with Pancasila is mandatory to provide certainty, benefit, and justice for society in accordance with the nation's identity.

## 2. METHOD

This research is classified as normative law research, which examines the law conceptualized as norms or rules that apply within society and serve as guidelines for individual behavior. It can also be categorized as doctrinal law research, which studies the law conceptualized and developed based on doctrines adopted by the concept developers. Based on its objective, this research is directed as "problem solution" research, aiming to find solutions to the issues faced. From the application perspective, it is categorized as pure research, aimed at the development of knowledge or theory, as well as the advancement of research methods. Regarding the field of study, this research falls under interdisciplinary research, which focuses not only on a single field of discipline.

The approach methods used in this research include: Philosophical Approach, Statute Approach, Conceptual Approach, Historical Approach, Comparative Approach. The legal materials used in this research consist of: Primary legal materials, Secondary legal materials, Tertiary legal materials. The analysis approach in this research employs qualitative methods by interpreting the processed legal materials. [12] Additionally, this research also uses quantitative approaches, analyzing primary legal materials in the form of legislation based on numerical or quantitative calculations or using statistical figures. [13]

## 3. RESULTS AND DISCUSSION

### 1. Harmonizing Pancasila Values Using Natural Language Processing Methods

Currently, various artificial intelligence (AI) technologies are being developed to assist in testing the validity of Indonesian regulations against the values of Pancasila, as defined by the Agency for the Implementation of Pancasila Ideology (BPIP).

Alan Turing, a British scientist considered one of the pioneers of AI, developed a set of criteria known as the Turing Test, which assesses whether a machine can exhibit intelligent behavior indistinguishable from that of a human. A machine's ability to understand and process natural language is a crucial criterion of the Turing Test. [14]

## 1.1. Application of NLP in Legal Document

One of the techniques used to examine the coherence between legal documents or regulations is Natural Language Processing (NLP). NLP is an interdisciplinary research field aiming to make machines understand and process human language. It is categorized as a sub-discipline of the broader field of AI, investigating the simulation of human intelligence through machines. NLP-based applications are ubiquitous, including Alexa, Google Translate, chatbots, and more. [15]

NLP is used by many legal researchers to examine text similarity in regulations for the purpose of legal harmonization. [16] Emilio Sulis, in his research titled "Exploiting Textual Similarity Techniques in the Harmonization of Laws," integrates NLP and Law, focusing on the key concept of harmonization in European Union law. Sulis explores computational text similarity techniques with the idea of creating identical regulations across multiple areas of governance. Additionally, Sulis performs similarity metric calculations, result analysis, and visualization to demonstrate how NLP processes texts and similarity metrics can support the goal of legal harmonization. [17]

## 1.2. Steps to Analyze Text Similarity in Legal Harmonization

The following steps outline the process for analyzing text similarity in regulations using NLP:

## 1. Importing Libraries

The key part of NLP is converting text into mathematical objects. The Natural Language Toolkit Library (NLTK) is a popular Python library for natural language processing. NLTK provides various functions to transform text into vectors. The most basic function is tokenization, which splits a document into a list of units (words, letters, or sentences). To rationalize vectors, useful NLTK functions include stopwords, lemmatization, and stemming.

To import the required data using several NLTK functions such as stopwords, lemmatization, and stemming, you can use the following code:

```
import nltk
#nltk.download('stopwords')
#from nltk.corpus import stopwords
from nltk.stem.porter import PorterStemmer
from nltk.stem.snowball import SnowballStemmer
from nltk.stem.wordnet import WordNetLemmatizer
import pandas as pd
import re
import numpy as np
from sklearn.feature_extraction.text import CountVectorizer, TfidfVectorizer
```

## 2. Text Processing

After importing the necessary libraries, the next step is processing the text from the regulations saved in .txt format. The file is then processed using the following code:

```
def baca_file(path):

f = open(path, encoding="utf8")

text = f.read()

f.close()

return text
```

To call the prepared regulation file, use the following code:

```
teks1 = baca_file('nama file 1.txt')

teks2 = baca_file('nama file 2.txt')

corpus = [teks1,teks2]

corpus
```

## 3. Removing Stopwords

Stopwords are used to eliminate unnecessary words, numbers, or letters from the comparison, thus reducing the search space and increasing efficiency. Use the following code:

```
from                Sastrawi.StopWordRemover.StopWordRemoverFactory                import
StopWordRemoverFactory

stop_factory = StopWordRemoverFactory()

more_stopword = ['kata', 'angka','huruf',]

stopwords_data = stop_factory.get_stop_words()+more_stopword

stopword = stop_factory.create_stop_word_remover()

print(stopwords_data)
```

To obtain details of words that have been filtered using stopwords, use the following code:

```
corpus_stop_remove = [[x for x in x.split() if x not in stopwords_data] for x in corpus]

 corpus_stop_remove
```

After ensuring that unwanted words, letters, or numbers have been removed, use the following code to combine the text data back together for comparison purposes.

```
corpus = [' '.join(x) for x in corpus_stop_remove]

corpus
```

## 4. Counting Text Similarity

Text similarity between regulations can be calculated using two methods:

### a) Cosine Similarity on Vectors Using CountVectorizer

To calculate text similarity or distance between documents, you can use the bow_matrix obtained through CountVectorizer. The code used is as follows:

```
vectorizer = CountVectorizer()
bow_matrix = vectorizer.fit_transform(corpus)

print(vectorizer.get_feature_names_out())
print(bow_matrix.toarray())

for i in range(bow_matrix.shape[0]):
for j in range(i + 1, bow_matrix.shape[0]):
print("The cosine similarity between the documents ", i, "and", j, "is: ",
cosine_similarity(bow_matrix.toarray()[i], bow_matrix.toarray()[j]))
```

The Cosine similarity on vectors developed using CountVectorizer produces cosine similarity calculations in the following output block: document 0 and document 1 are the closest or most similar, whereas document 1 and document 2 are the farthest or least similar.

### b) Cosine Similarity on Vectors Using TfIdfVectorizer

The TF-IDF matrix obtained through TfIdfVectorizer can also be used to calculate distances between documents or, in other words, to assess similarities among regulations for the purpose of harmonization. The code used is as follows:

```
vectorizer = TfidfVectorizer()
tf_idf_matrix = vectorizer.fit_transform(corpus)

print(vectorizer.get_feature_names_out())
print(tf_idf_matrix.toarray())
print("\nThe shape of the TF-IDF matrix is: ", tf_idf_matrix.shape)

for i in range(tf_idf_matrix.shape[0]):
for j in range(i + 1, tf_idf_matrix.shape[0]):
print("The cosine similarity between the documents ", i, "and", j, "is: ",
cosine_similarity(tf_idf_matrix.toarray()[i], tf_idf_matrix.toarray()[j]))
```

Cosine Similarity on vectors developed using TfIdfVectorizer can also be differentiated based on the cosine similarity calculations as follows: document 0 and document 1 are the closest or most similar, while document 1 and document 2 are the farthest or least similar.

TF-IDF approach is commonly used to weigh terms (compare terminology). TF-IDF is found in applications, search engines, information retrieval, and text mining systems. TF-IDF is also an occurrence-based method for text vectorization and text extraction.

TF is similar to the CountVectorizer tool. TF calculates how often terms occur in a document. Since most documents in a text corpus vary in length, terms are likely to appear more frequently in longer documents than in shorter ones.

TF functions to normalize term frequency by dividing it by the total number of terms in the document. There are many variations to calculate TF, but the following representation is the most common:

$$TF(w) = \frac{Number\ of\ times\ the\ word\ w\ occurs\ in\ a\ document}{Total\ number\ of\ words\ in\ the\ document}$$

Meanwhile, IDF functions to extract terms that do not appear too frequently in documents but may have meanings or significance that represent the document. In other words, IDF measures the importance of terms in a document. TF is used to calculate how often a term appears in a document, whereas IDF calculates how often important terms appear in a document. Similar to TF, there are many ways to measure IDF, but the following representation is the most common:

$$IDF(w) = log\frac{Total\ number\ of\ documents}{Number\ of\ documents\ containing\ word\ w}$$

Therefore, to measure the value of each term, the method to calculate TF-IDF is by using the following formula:

$$weight(w, d) = TF(w, d) \times IDF(w)$$

## 5. Cosine Similarity Calculation

Cosine Similarity is the next step to assess the angular similarity between two vectors. It measures the cosine of the angle between two vectors. The cosine similarity value ranges from -1 to +1. A value of +1 indicates that the vectors are highly similar, while a value of -1 indicates that the vectors are highly dissimilar or completely opposite to each other.

In other words, if the cosine similarity value of two regulations is close to +1, it can be said that these regulations have significant similarity or are harmonious. Conversely, if their cosine similarity value is far from +1 or approaches -1, then these regulations can be considered non-coherent or disharmonious.

The formula to calculate cosine similarity between two vectors A and B is as follows:

$$cos(\theta) = \frac{A \cdot B}{||A||\,||B||}$$

In addition to the formula above, cosine similarity between two vectors A and B can also be calculated using the following formula:

$$cos(\theta) = \frac{A \cdot B}{\sqrt{\sum_{i=1}^{i=N} w_{iA}^2}\sqrt{\sum_{i=1}^{i=N} w_{iB}^2}}$$

To process this formula in Python, the following code is used:

```
def cosine_similarity(vector1, vector2):
vector1 = np.array(vector1)
vector2 = np.array(vector2)
return    np.dot(vector1,    vector2)    /    (np.sqrt(np.sum(vector1**2))    *
np.sqrt(np.sum(vector2**2)))
```

## 4. ANALYSIS OF REGULATIONS

Based on the steps above, this research has conducted an analysis of various legislative regulations deemed to be in conflict with Pancasila values and regulations considered to have internalized Pancasila values. The study measures text similarity between Pancasila indicators as regulated in Regulation of the Pancasila Ideology Development Board of the Republic of Indonesia Number 4 of 2022 concerning Pancasila Values Indicators with other legislative regulations such as the 1945 Constitution before amendments, the 1945 Constitution after amendments, Law of the Republic of Indonesia Number 6 of 2023 concerning the Stipulation of Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation into Law, Law of the Republic of Indonesia Number 35 of 2009 concerning Narcotics, Law of the Republic of Indonesia Number 39 of 1999 concerning Human Rights, Government Regulation of the Republic of Indonesia Number 57 of 2021 concerning National Education Standards, Presidential Regulation of the Republic of Indonesia Number 10 of 2021 concerning Investment Business Fields, West Nusa Tenggara Governor Regulation Number 51 of 2015 concerning Halal Tourism, Special Region of Yogyakarta Regional Regulation Number 1 of 2022 concerning Pancasila Education and National Insight, and South Pringgasela Village Regulation Number 2 of 2020 concerning Guidelines for Village Administration Levy Fees. This is done to examine the coherence of legislative regulations and to measure their validity in terms of Pancasila values.

**Table 1: The results of the text similarity testing between Pancasila Indicators and Indonesian legislative regulations using NLP.**

| Regulation | CountVectorizer Score | TfIdfVectorizers Score |
|---|---|---|
| The 1945 Constitution of the Republic of Indonesia (pre-amendment) | 0.17 | 0.10 |
| The 1945 Constitution of the Republic of Indonesia (post-amendment) | 0.17 | 0.12 |
| Law of the Republic of Indonesia Number 6 of 2023 concerning the Stipulation of Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation into Law | 0.16 | 0.11 |
| Law of the Republic of Indonesia Number 35 of 2009 concerning Narcotics | 0.10 | 0.07 |
| Law of the Republic of Indonesia Number 39 of 1999 concerning Human Rights | 0.24 | 0.18 |
| Government Regulation of the Republic of Indonesia Number 57 of 2021 concerning National Education Standards, | 0.12 | 0.08 |
| Presidential Regulation of the Republic of Indonesia Number 10 of 2021 concerning Investment Business Fields | 0.14 | 0.10 |
| West Nusa Tenggara Governor Regulation Number 51 of 2015 concerning Halal Tourism | 0.11 | 0.06 |
| Special Region of Yogyakarta Regional Regulation Number 1 of 2022 concerning Pancasila Education and National Insight | 0.17 | 0.12 |
| South Pringgasela Village Regulation Number 2 of 2020 concerning Guidelines for Village Administration Levy Fees | 0.11 | 0.07 |

From the table above, the highest similarity score between Pancasila Indicators and legislative regulations is shown by the Human Rights Law with a CountVectorizer score of 0.24 and a TfIdfVectorizer score of 0.18. Next, the 1945 Constitution of the Republic of Indonesia (post-amendment) has a TfIdfVectorizer score of 0.12, which is higher compared to the 1945 Constitution (pre-amendment). Meanwhile, the Job Creation Law, considered to be in conflict with Pancasila, has a CountVectorizer score of 0.16 and a TfIdfVectorizer score of 0.11. These scores are relatively low but still show some text similarity, likely influenced by the extensive length of the Job Creation Law, which consists of 1,127 pages.

Conversely, the legislative regulation with the lowest similarity score is the Government Regulation on National Education Standards with a CountVectorizer score of 0.12 and a TfIdfVectorizer score of 0.08. Following this, the South Pringgasela Village Regulation on Guidelines for Village Administration Levy Fees has a CountVectorizer score of 0.11 and a TfIdfVectorizer score of 0.07. The Narcotics Law scores 0.10 with the CountVectorizer and 0.07 with the TfIdfVectorizer, and the lowest similarity is found in the NTB Governor Regulation on Halal Tourism with a CountVectorizer score of 0.11 and a TfIdfVectorizer score of 0.06.

Based on the text similarity test results above, it can be understood that the legislative regulations have not fully internalized Pancasila values. The CountVectorizer and TfIdfVectorizer scores of the analyzed regulations indicate text similarity levels far from the cosine value of +1. However, these scores do not necessarily imply that the regulations are in conflict or not in conflict with Pancasila values. The regulations might contain provisions embodying Pancasila values expressed with different language or terminology, which this method may not capture. The researcher suggests that this method of harmonization and validation should be further developed to analyze the entirety of legal documents to achieve high validity.

## 5. CONCLUSION

The harmonization of Pancasila values with legislation using NLP methods has generally shown that Indonesian legislative regulations, from a grammatical perspective, do not exhibit close alignment in terms of "words" or "terms." Consequently, several of the analyzed regulations have CountVectorizer or TfIdfVectorizer values that are far from a cosine value of +1. This implies that these regulations may either overlook or even contradict Pancasila values. On the other hand, this NLP method also demonstrates that the Human Rights Law has successfully internalized Pancasila values in its normative formation.

**Footnotes:**

1) Waldron, Jeremy. *The law*. Routledge, 1990: 26

2) Drastawan, I. Nengah Adi. "Kedudukan Norma Agama, Kesusilaan, dan Kesopanan Dengan Norma Hukum pada Tata Masyarakat Pancasila." *Jurnal Komunitas Yustisia* 4.3 (2021): 928-939, https://doi.org/10.23887/jatayu.v4i3.43189

3) Asshiddiqie, Jimly. "Teori Hierarki Norma Hukum." *Jakarta: Konpress* (2020): 77.

4) Hariyanto, Hariyanto. "Pembangunan Hukum Nasional Berdasarkan Nilai-Nilai Pancasila." *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi* (2018): 53-63, https://doi.org/10.24090/volksgeist.v1i1.1731

5) Cambridge University Press & Assessment 2024. https://dictionary.cambridge.org/dictionary/english/norm

6) Kelsen, Hans. *General theory of law and state*. Routledge, 2017: 37.

7) *Ibid.*

8) Jacobsohn, Gary Jeffrey. "Constitutional identity." *The review of politics* 68.3 (2006): 361-397. https://doi.org/10.1017/S0034670506000192

9) Munir, Fuady. "Teori-Teori Besar (Grand Theory) Dalam Hukum." *Jakarta: Kencana* (2013). 111

10) Bobby Constantine Koloway, Artikel ini telah tayang di TribunJatim.com, BPIP Sebut Ada 100 UU & Perda Potensi Bertentangan Pancasila, Hasil Kajian Berlanjut Judicial Review, https://jatim.tribunnews.com/2019/11/07/bpip-sebut-ada-100-uu-perda-potensi bertentangan-pancasila-hasil-kajian-berlanjut-judicial-review?page=all. Kamis 7 November 2019. Diakses pada tanggal 18/10/2023.

11) Munir, Fuady. "Teori-Teori Besar (Grand Theory) Dalam Hukum." *Jakarta: Kencana* (2013). *Op.Cit.* 109-110.

12) Mertokusumo, Sudikno, and A. Pitlo. "Penemuan hukum." *Citra Aditya Bakti, Bandung* (2009). 13

13) Muhaimin. "Metode Penelitian Hukum." *Dalam S. Dr. Muhaimin, Metode Penelitian Hukum, Mataram-NTB: Mataram* (2020), 107.

14) Kedia, Aman, and Mayank Rasu. *Hands-On Python Natural Language Processing: Explore tools and techniques to analyze and process text with a view to building real-world NLP applications*. Packt Publishing Ltd, 2020. 9.

15) *Ibid.*

16) Boella, G., Di Caro, L., Humphreys, L., Robaldo, L., Rossi, P., van der Torre, L.: *Eunomos, a legal document and knowledge management system for the web to provide relevant, reliable and up-to-date information on the law.* Artif. Intell. Law 24(3), 245–283 (2016). Boella, G., Di Caro, L., Leone, V.: *Semi-automatic knowledge population in a legal document management system.* Artif. Intell. Law 27(2), 227–251 (2018). https:// doi.org/10.1007/s10506-018-9239-8. Boella, G., Di Caro, L., Rispoli, D., Robaldo, L.: *A system for classifying multi-label text into EuroVoc. In: Proceedings of the Fourteenth International Conference on Artificial Intelligence and Law,* 239–240 (2013). Friedrich, R., Luzzatto, M., Ash, E.: *Entropy in legal language. In: Aletras, N., Androutsopoulos, I., Barrett, L., Meyers, A., Preotiuc-Pietro, D. (eds.) Proceedings of the Natural Legal Language Processing Workshop 2020 co-located with the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining* (KDD 2020), Virtual Workshop, 24 August 2020. CEUR Workshop Proceedings, vol. 2645, 25–30. CEUR-WS.org (2020). http://ceur-ws.org/Vol-2645/paper4. pdf

17) Emilio Sulis, Llio Bryn Humphreys, Davide Audrito, 2021, *Exploiting Textual Similarity Techniques in Harmonization of Laws,* AIxIA 2021 – Advances in Artificial Intelligence, 20th International Conference of the Italian Association for Artificial Intelligence Virtual Event, December 1–3, 2021.185-197.

**References**

1) Aarnio Aulis, *On the Validity, Efficacy and Acceptability of Legal Norms, in Philosophical perspectives in Jurisprudence*, Acta Philosophica Fennica, 1983.

2) Asshiddiqie, Jimly. "Teori Hierarki Norma Hukum." Jakarta: Konpress (2020).

3) Bobby Constantine Koloway, Artikel ini telah tayang di TribunJatim.com. BPIP Sebut Ada 100 UU & Perda Potensi Bertentangan Pancasila, Hasil Kajian Berlanjut Judicial Review, https://jatim.tribunnews.com/2019/11/07/bpip-sebut-ada-100-uu-perda-potensi bertentangan-pancasila-hasil-kajian-berlanjut-judicial-review? page=all. Kamis 7 November 2019. Diakses pada tanggal 18/10/2023.

4) Boella, G., Di Caro, L., Humphreys, L., Robaldo, L., Rossi, P., van der Torre, L.: Eunomos, a legal document and knowledge management system for the web to provide relevant, reliable and up-to-date information on the law. Artif. Intell. Law 24(3), (2016).

5) Boella, G., Di Caro, L., Leone, V.: Semi-automatic knowledge population in a legal document management system. Artif. Intell. Law 27(2), (2018). https:// doi.org/10.1007/s10506-018-9239-8.

6) Boella, G., Di Caro, L., Rispoli, D., Robaldo, L.: A system for classifying multi-label text into EuroVoc. In: Proceedings of the Fourteenth International Conference on Artificial Intelligence and Law. (2013).

7) Cambridge University Press & Assessment 2024. https://dictionary.cambridge.org/dictionary/english/norm

8) Drastawan, I. Nengah Adi. "Kedudukan Norma Agama, Kesusilaan, dan Kesopanan Dengan Norma Hukum pada Tata Masyarakat Pancasila." Jurnal Komunitas Yustisia 4.3 (2021), https://doi.org/10.23887/jatayu.v4i3.43189

9)   Emilio Sulis, Llio Bryn Humphreys, Davide Audrito, 2021, Exploiting Textual Similarity Techniques in Harmonization of Laws, AIxIA 2021 – Advances in Artificial Intelligence, 20th International Conference of the Italian Association for Artificial Intelligence Virtual Event, December 1–3, 2021.

10)  Friedrich, R., Luzzatto, M., Ash, E.: Entropy in legal language. In: Aletras, N., Androutsopoulos, I., Barrett, L., Meyers, A., Preotiuc-Pietro, D. (eds.) Proceedings of the Natural Legal Language Processing Workshop 2020 co-located with the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD 2020), Virtual Workshop, 24 August 2020. CEUR Workshop Proceedings, vol. 2645. CEUR-WS.org (2020). http://ceur-ws.org/Vol-2645/paper4. pdf

11)  Hariyanto, Hariyanto. "Pembangunan Hukum Nasional Berdasarkan Nilai-Nilai Pancasila." Volksgeist: Jurnal Ilmu Hukum dan Konstitusi (2018): 53-63, https://doi.org/10.24090/volksgeist.v1i1.1731

12)  Hayyan ul Haq, 2024, Transformasi Legal Positivism dalam Pengembanan Hukum Teoritik, (Makalah 39 halaman, unpublished work), Materi Kuliah Filsafat, Teori Hukum dan Epistemologi Hukum pada Program Doktor Ilmu Hukum UNRAM, UNS, USU, UNAND dan UNIBRA,

13)  Hayyan ul Haq, Kesalahan Teoritik Dalam Putusan MK Yang Memberlakukan Norma Inskonstitusional Bersyarat, diakses dari https://www.youtube.com/watch?v=J0PwjB5aSFM&t=14s pada 04/06/2024.

14)  Jacobsohn, Gary Jeffrey. "Constitutional identity." The review of politics 68.3 (2006): 361-397. https://doi.org/10.1017/S0034670506000192

15)  Kedia, Aman, and Mayank Rasu. Hands-On Python Natural Language Processing: Explore tools and techniques to analyze and process text with a view to building real-world NLP applications. Packt Publishing Ltd, 2020.

16)  Kelsen, Hans. General theory of law and state. Routledge, 2017.

17)  Mertokusumo, Sudikno, and A. Pitlo. "Penemuan hukum." Citra Aditya Bakti, Bandung (2009).

18)  Muhaimin. "Metode Penelitian Hukum." Dalam S. Dr. Muhaimin, Metode Penelitian Hukum, Mataram-NTB: Mataram (2020).

19)  Munir, Fuady. "Teori-Teori Besar (Grand Theory) Dalam Hukum." Jakarta: Kencana (2013).

20)  Waldron, Jeremy. The law. Routledge, 1990.