

UNDERSTANDING THE REGIONAL AND CONSTITUTIONAL IMPACT OF CEDAW USING AUTOMATED CONTENT ANALYSIS OF NATION-STATE CONSTITUTIONS

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INTRODUCTION

- **Unique Partnerships**
 - Karen Vogel
 - Bridget McInnes
- **Goal of collaboration:**
 - Understanding Constitutional Impact of CEDAW in the European Union using Automated Content Analysis

RESEARCH QUESTIONS

- Does the language of current EU nation-state constitutions show specific recognition of equality for women after a country's adoption of CEDAW?
- Do differences exist in the approximation of the language of constitutions of EU states in the acceptance of women's formal political rights
 - Specifically Articles 7 & 8
- How do the constitutions of the states rank or compare to each other in their approximation to the language of CEDAW generally?

OVERVIEW OF PRESENTATION

- Part I:
 - Background
 - Previous Research
- Part 2:
 - Discussion of Data and Methods
 - Results
- Part 3:
 - Conclusions

BRIEF HISTORY OF CEDAW AND THE EU

- Women rights instruments before CEDAW:
 - 1952: UN Convention on the Political Rights of Women
 - 1957: UN Convention on the Consent to Marriage
 - 1967: UN Declaration on the Elimination of Discrimination Against Women

- The United Nations Commission on the Status of Women
 - 1972: Begins discussion on possible binding treaty or convention

- CEDAW
 - 1979: Adopted by UN General Assembly (1979)
 - 1981: Enters force (1981)
 - 1982: Formation of UN Committee on the Elimination of Discrimination Against Women
 - 1999: UN adopts CEDAW's Optional Protocol

BRIEF HISTORY CONTINUED

- 27 EU countries ratified CEDAW

- 24 EU countries ratified Optional Protocol
 - 3 states did not
 - Estonia
 - Latvia
 - Malta

- 2009 Lisbon Treaty opens the door for the EU as a full legal entity to ratify UN Conventions

LITERATURE REVIEW

- United Nations Reports from Commission on Status of Women and Committee on the Elimination of All Forms of Discrimination Against Women
- Other reports from NGOs, research centers or international organizations
- Feminist International Law Literature
- Academic Literature on CEDAW or CEDAW and the European Union

DATA: CONSTITUTIONS

○ Constitutions

- 26 EU countries (except UK)
- obtained from: Constitution Finders database
 - constitutions.richmond.edu

○ Statistics

- Average number of words: 16,650
 - Maximum = 48,978 (Cyprus)
 - Minimum = 8,812 (Czech Republic)
- Average number of content words: 1,741
 - Words with determiners and common words removed
 - e.g. the, and, of, sometimes, ...

DATA: CEDAW

- English version of CEDAW published by the UN
 - <http://www.un.org/womenwatch/daw/cedaw/>
 - Focus on Articles 7 & 8
 - Deal specifically with women's equality and the need to eliminate discrimination in political and public life

- Statistics
 - Full: 4,426 words
 - Article 7: 101 words
 - Article 8: 41 words
 - Articles 7 & 8: 142 words

METHOD

○ 3 steps

- Step 1: Extract *ngram* features from CEDAW
 - Specifically unigrams, bigrams and trigrams
- Step 2: Create a *feature vector* for each constitutions using the ngram features extracted from CEDAW
- Step 3: Compare each constitution's feature vector with the CEDAW feature vector using cosine similarity
 - Cosine similarity measures the degree of similarity between two vectors
 - The closer the angle the more similar the constitution is to CEDAW

METHOD

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STEP 1: EXTRACT NGRAM FEATURES FROM CEDAW

Ngrams: contiguous sequence of N content words

CEDAW: Among the international human rights treaties

Unigrams (1-grams)

- among
- international
- human
- rights
- treaties

Bigrams (2-grams)

- international human
- human rights
- rights treaties

Trigrams (3-grams)

- international human rights
- human rights treaties

NGRAM FEATURES USED TO REPRESENT
THE CONTENT OF CEDAW

METHOD

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STEP 2: CREATE A FEATURE VECTOR

among	<input type="checkbox"/>
international	<input type="checkbox"/>
human	<input type="checkbox"/>
rights	<input type="checkbox"/>
treaties	<input type="checkbox"/>
international human	<input type="checkbox"/>
human rights	<input type="checkbox"/>
rights treaties	<input type="checkbox"/>
international human rights	<input type="checkbox"/>
human rights treaties	<input type="checkbox"/>

CONSTITUTION:

Conformity with the international
declaration of human rights

STEP 2: CREATE A FEATURE VECTOR

among	0
international	1
human	1
rights	1
treaties	0
international human	0
human rights	2
rights treaties	0
international human rights	0
human rights treaties	0

CONSTITUTION:

Conformity with the international declaration of human rights

STEP 2: CREATE A FEATURE VECTOR

among	0
international	1
human	1
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CONSTITUTION:

Conformity with the international
declaration of human rights

← Length of ngram

:: weighting longer matches

METHOD

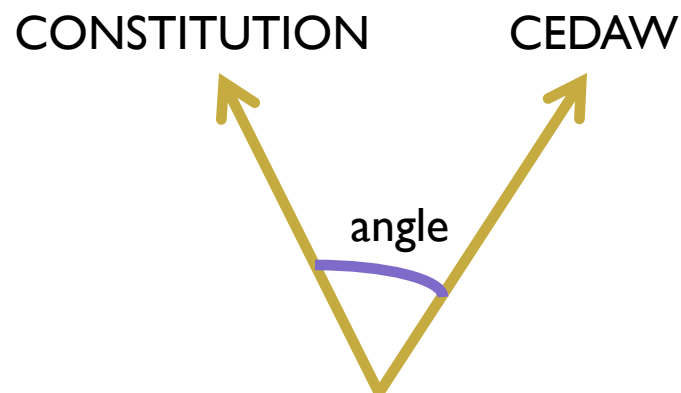
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STEP 3: CREATE A FEATURE VECTOR

among	0	1
international	1	1
human	1	1
rights	1	1
treaties	0	2
international human	0	2
human rights	2	2
rights treaties	0	2
international human rights	0	3
human rights treaties	0	3
	CONSTITUTION	CEDAW

$$\text{COS} \frac{A \cdot B}{\|A\| \|B\|}$$



EXPERIMENTAL FRAMEWORK

- Create a vector for each constitution based ngrams from:
 - CEDAW
 - Article 7
 - Article 8
 - Articles 7 & 8
- Ranked the constitutions based on their cosine similarity scores
- Analysis: read individual constitutions to check language and themes.

RESULTS

Country	CEDAW	CEDAW Article 7	CEDAW Article 8	CEDAW Article 7 & 8
Italy	0.24	0.58	0.55	0.56
Romania	0.24	0.5	0.68	0.56
Hungry	0.24	0.49	0.69	0.56
Poland	0.25	0.53	0.6	0.55
Greece	0.27	0.52	0.6	0.54
Portugal	0.29	0.5	0.54	0.53
Spain	0.26	0.46	0.66	0.53
Slovenia	0.23	0.5	0.52	0.51
Cyprus	0.28	0.49	0.59	0.51
Germany	0.27	0.49	0.56	0.51
Bulgaria	0.24	0.48	0.56	0.5
Lithuania	0.22	0.46	0.55	0.49
Austria	0.25	0.46	0.53	0.48
Slovakia	0.25	0.46	0.55	0.48
Netherlands	0.21	0.45	0.45	0.47
France	0.23	0.44	0.53	0.46
Sweden	0.23	0.43	0.56	0.46
Finland	0.21	0.43	0.48	0.43
Belgium	0.23	0.41	0.47	0.43
Ireland	0.22	0.39	0.49	0.42
Denmark	0.22	0.41	0.43	0.41
Estonia	0.19	0.38	0.45	0.39
Czech Republic	0.19	0.36	0.45	0.39
Luxembourg	0.19	0.36	0.43	0.38
Latvia	0.15	0.36	0.43	0.37
Malta	0.14	0.37	0.33	0.36
AVERAGE	0.23	0.45	0.53	0.46

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RESULTS

- Analysis: read individual constitutions to check language and themes.
 - Focus: low scoring countries (e.g. Malta) and high scoring countries (e.g. Hungary and Italy)
 - Higher scoring country's constitutions make explicit statements about equal rights for men and women
 - This is exactly what are our method is measuring

CORRELATION ANALYSIS

- Correlation between
 - Human Development Index (HDI)
 - Composite index based on the health, education and living standards of individuals in a country
 - Gender Inequality Index (GII)
 - Built on the same framework as HDI only specific to women and girls
 - Percentage of Women in Parliament

CORRELATION METRIC

- Spearman's rank correlation
 - Measures the statistical dependence between two variables to assess how well the relationship between the variables can be described using a monotonic function $[-1, 1]$
 - Positive correlation signifies that as the values of one variable increase, the values of the second also increase
 - Negative correlation signifies that as the values of one variable increase, the values of the second decrease

CORRELATION RESULTS

	CEDAW Article 7	CEDAW Article 8	CEDAW Articles 7 & 8
HDI Rankings	0.2213	0.2536	0.2424
GII Rankings	0.0301	0.0953	0.0345
% Women Parliament	-0.1954	-0.1989	-0.1807

CORRELATION DISCUSSION

- No significant correlation between the our metric and HDI, GII or % Women in Parliament rankings
- HDI and GII are measuring broader forms of inequality therefore a direct correlation between the indices and the language in the constitution may not be possible

OBSERVATION: LIMITATIONS OF STUDY

- Only able to look at constitutions in regions after states' ratification of CEDAW due to difficulties finding complete copies of constitutions for all EU states
 - Historical documents would allow us to study the degree of changes within constitutional language regarding women's political rights
- Vectors used in the study are first-order vector which require an exact match between ngram features from CEDAW and the constitutions
 - Future:
 - utilize 2nd order vectors which take into account the context in which a feature occurs
 - utilize windowing allow greater overlap

OBSERVATIONS: OVERALL STUDY

- Our study fills a gap in the academic literature on the regional studies of CEDAW by discussing impact on constitutions in the EU and comparatively ranking states.
- At same time, we use the relatively new method of automated content analysis in understanding to what degree constitutions within the EU approximate the language of CEDAW.

OVERALL CONCLUSIONS

- Study complements many other UN, EU, and Council of Europe conclusions that show even if a state makes explicit notions of equal treatment as per CEDAW, this language does not necessarily translate into actual representation or full political equality for women.
- This does not mean that CEDAW does not matter; rather the process of changing values and political practice is complex and on-going. Communicating values and implementing women's empowerment through the formal language of constitutions and electoral systems is only one step or part of that larger process.

THANK YOU

Questions?