Relationships between kind of violations of the trade union rights protected by ILO conventions: A statistical implicative analysis of a text mining results

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Outline

Goal of the study :

- Give a descriptive view of social dialogue regimes.
- Understand the link with regions.
- Based on ILO conventions 87 et 98.

  Convention 87 : condition for trade union independence and rights to industrial action.

  Convention 98 : relationships between trade union and employer organizations and condition for collective bargaining.

- Show how implicative analysis complement more classical exploratory data analysis results.

Project "Social Dialogue Regimes"

- Financially supported by GIAN Fundation[1].
- University of Geneva.
- University of Lyon 2.
- International Institut for Labour Studies (ILO).

Project goal :

- Get new insight on Social Dialogue Regimes.
- Understand the socio-economic outcomes and determinant of social dialogue regimes.

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[1]http ://www.ruig-gian.org

Outline

- Text mining results.
- Based on CEACR report on each convention.
- Predict the probability of the mention of a violation in the report.
- Six types of violations for convention 87 and 5 for convention 98.

Key concept

	Convention 87
v_3	Right to establish and join workers' organisations
v_4	Trade union pluralism
v_6	Election of representatives / Eligibility criteria
v_7	Organisation of trade union activities
v_8	Approval and registration of workers' organisations
v_9	Restrictions on the right to industrial action

	Convention 98
w_1	Anti-union discrimination
w_2	Acts of interference
w_5	Right to collective bargaining
w_6	Designation of bargaining partner / representative trade union
w_8	Negotiable issues and substantive outcomes of collective bargaining / Permissible restrictions

Error rates (convention 87)

Key Concept (violation)	Learning error rate	cross-validation error rate	std err	Test sample (size 21) number of errors
v_3	14.10%	n.a.*	n.a.*	3
v_4	5.13%	5.13%	2.50%	0
v_6	12.82%	14.1%	3.94%	4
v_7	15.38%	n.a.*	n.a.*	7
v_8	7.69%	7.69%	3.01%	4
v_9	2.56%	2.56%	1.79%	2

*Cross-validation is not available for v_3 and v_7, because first split is enforced.

Data Recoding

- Violation are not always mentioned.
- We do not have a report for each year.
- We need to look at a period.
- Data recoded using maximum predicted probability of violation for period 1997-2002.

Convention 87

Key concept	Percentage
v_3	36.9%
v_4	22.7%
v_6	31.9%
v_7	23.4%
v_8	28.4%
v_9	61.0%

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- We seek to identify systems of violations.
- We used a two stage approach :
  - Extraction of principal factor of a multiple correspondance analysis.
  - Agglomerative hierarchical clustering with Ward criteria.

Typology of Countries

	Type of violation	Clusters				Total
		1	2	3	4	
v_3	Right to establish and join workers' organ.	0%	38.9%	51.1%	**81.5%**	36.9%
v_4	Trade union pluralism	0%	**100.0%**	0.0%	51.9%	22.7%
v_6	Election of representatives /Eligibility criteria	3.9%	33.3%	22.2%	**100.0%**	31.9%
v_7	Organisation of trade union activities	2.0%	**0.0%**	11.1%	**100.0%**	23.4%
v_8	Approval and registration of workers' organ.	0%	**44.4%**	26.7%	**74.1%**	28.4%
v_9	Restrictions on the right to industrial action	**0%**	88.9%	**95.6%**	**100.0%**	61.0%
	Percentage of cases in cluster	36.2%	12.8%	31.9%	19.1%	100%
	Mean number of violations	0.06	3.06	2.07	5.07	2.04

Typology of Countries

Cluster 1 : No violation (Clu_NoViolation).
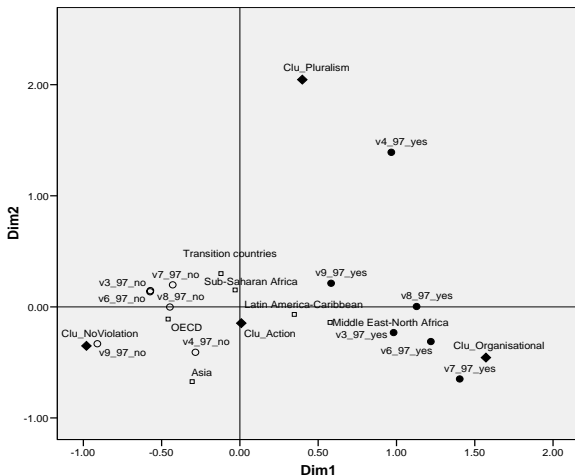
Cluster 2 : Pluralism restrictions (Clu_Pluralism).

Cluster 3 : Action restrictions (Clu_Action).

Cluster 4 : Organizational and action restrictions(Clu_Organisational).

Outline

Factorial Multiple Correspondence Analysis

Outline

Graph of Implication Between Types of Violation
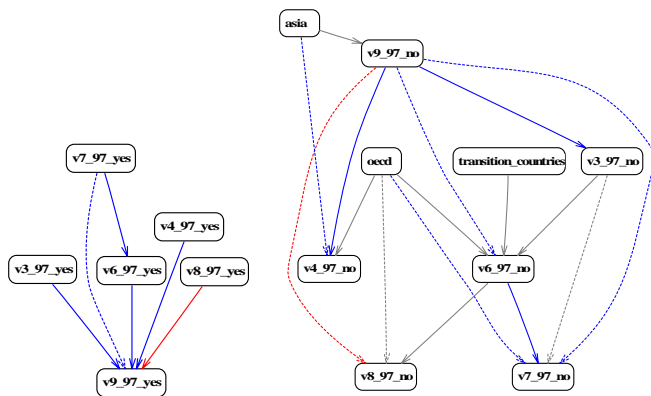
Confidence : 99% (red), 95% (blue), 75% (grey, right graph only).

Typicality of supplementary variables

Path	Caribbean and Latin America	Middle east and North Africa
v7_97_yes ⇒ v6_97_yes ⇒ v9_97_yes	*	**
v7_97_yes ⇒ v6_97_yes		**
v7_97_yes ⇒ v9_97_yes		**
v6_97_yes ⇒ v9_97_yes	**	
v4_97_yes ⇒ v9_97_yes		
v3_97_yes ⇒ v9_97_yes		*
v8_97_yes ⇒ v9_97_yes		*

Absence of violations		
Path	Asia	OECD
v9_97_no ⇒ v4_97_no	**	*
v9_97_no ⇒ v6_97_no ⇒ v7_97_no	**	*
v9_97_no ⇒ v6_97_no	**	*
v6_97_no ⇒ v7_97_no		**
v9_97_no ⇒ v8_97_no	**	**
v9_97_no ⇒ v3_97_no	**	

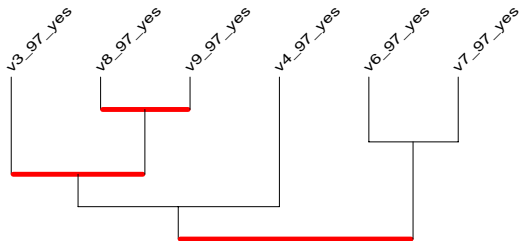One star indicate a typicality with a risk of 10% and two stars a risk of 5%.

Outline
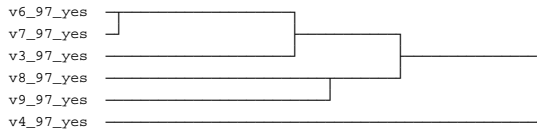
Cohesive Tree of Violations
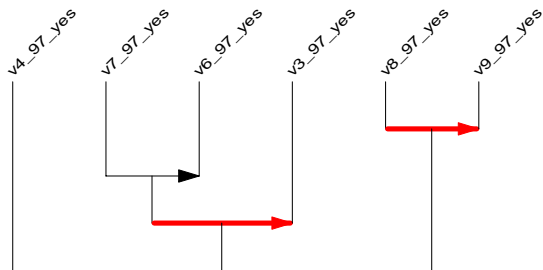
Similarity Tree of Violations

Average linkage, Pearson correlation proximity

Outline

About "Social Dialogue Regimes" :

- We identified different kind of social dialogue regimes.
- v_9 is implied by every type of violation.
- Organizational violations are closely linked.

From a methodological point of view :

- Importance to look at implication between negative indicator if it make sens.
- Robustness of hierarchical violation clustering

Thank you for your attention !