Ideas, interests and the effectiveness of public participation

2025.2

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Context and background

- Regulation in numbers research on public participation
  - Large scale research project on notice and comment procedures of the independent agencies
  - Study group discussing similar applied research
  - Questions regarding "capture" or a "bias towards businesses"
- Same subject already explored in my Master's thesis
  - Opportunity to improve the results, strenghten the methodology and further explore the problem

Framing the problem

- Does commenter identity matter in notice and comment procedures?
  - Balla (2022): bureaucrats say it doesn't
  - Legal framework: participation as information exchange (a dialogue)
- Implications for regulatory policy
  - Concrete policy implications
  - Access is not enough (Regulations.gov, examples from Anvisa and Aneel)

Outline:

- Chapter 1: Introduction
- Chapter 2: Theoretical Framework
- Chapter 3: ANATEL's public consultations: methodology and descriptive statistics
- Chapter 4: Who says it, or what is said?
- Chapter 5: Uncovering interest group dynamics
- Chapter 6: Issue networks and the circulation of ideas
- Chapter 7: Discussing policy implications and further research

Theoretical Framework (Chapter 2)

- Traditional interest group theory (Iron Triangle)
  - "Participation as representation": theoretical focus on **who** participates and **who** gets heard
    - Ideas and arguments defined by pre-existing interests and preferences
    - **Dialogue and learning play a small role**, for both participants and regulators

Theoretical Framework (Chapter 2)

- Extreme view:'Kabuki Theater' view of notice and comment (Donald Elliot)
  - Notice and comment as just a staged act for the sake of gathering materials for litigation in the future.
  - But if this was true, we would have to see two effects:
    - Identity would be very important, as some participants would be more likely to litigate effectively against the agency.
    - Comments opposing regulation would likely receive more attention from the agency.
  - Applicability to Brazil's legal system might be questioned, but still an interesting argument to explore.

Theoretical Framework (Chapter 2)

- Issue Network Theory
  - Shared knowledge and values play a central role in the formation of interests
  - Issue Network theory **rejects any ontological primacy between interests and ideas**: they are co-constitutive, as networks form around ideas that shape participants' interests

Theoretical Framework (Chapter 2)

- Facing the research challenges of measuring ideas
  - Current approaches to understanding the role of ideas in applied research have important limitations and are resource-intensive.
  - **Methodological contribution**: two new ways to "measure" the content of comments in public participation.
    - Statistical representation of text.
    - LLM-assisted coding.

Theoretical Framework (Chapter 2)

- Selection of Anatel (a highly technical regulatory context) to stress the traditional theories and see in which conditions Issue Networks provide a better explanation.

> *"No one argues that there are only issue networks or only subgovernments active in policymaking. Rather, the argument is over what is most typical and most descriptive of the policy process. Which should serve as our framework for analyzing how laws and regulations are made?" (Jeffrey Berry, 1989, p. 243-44)*

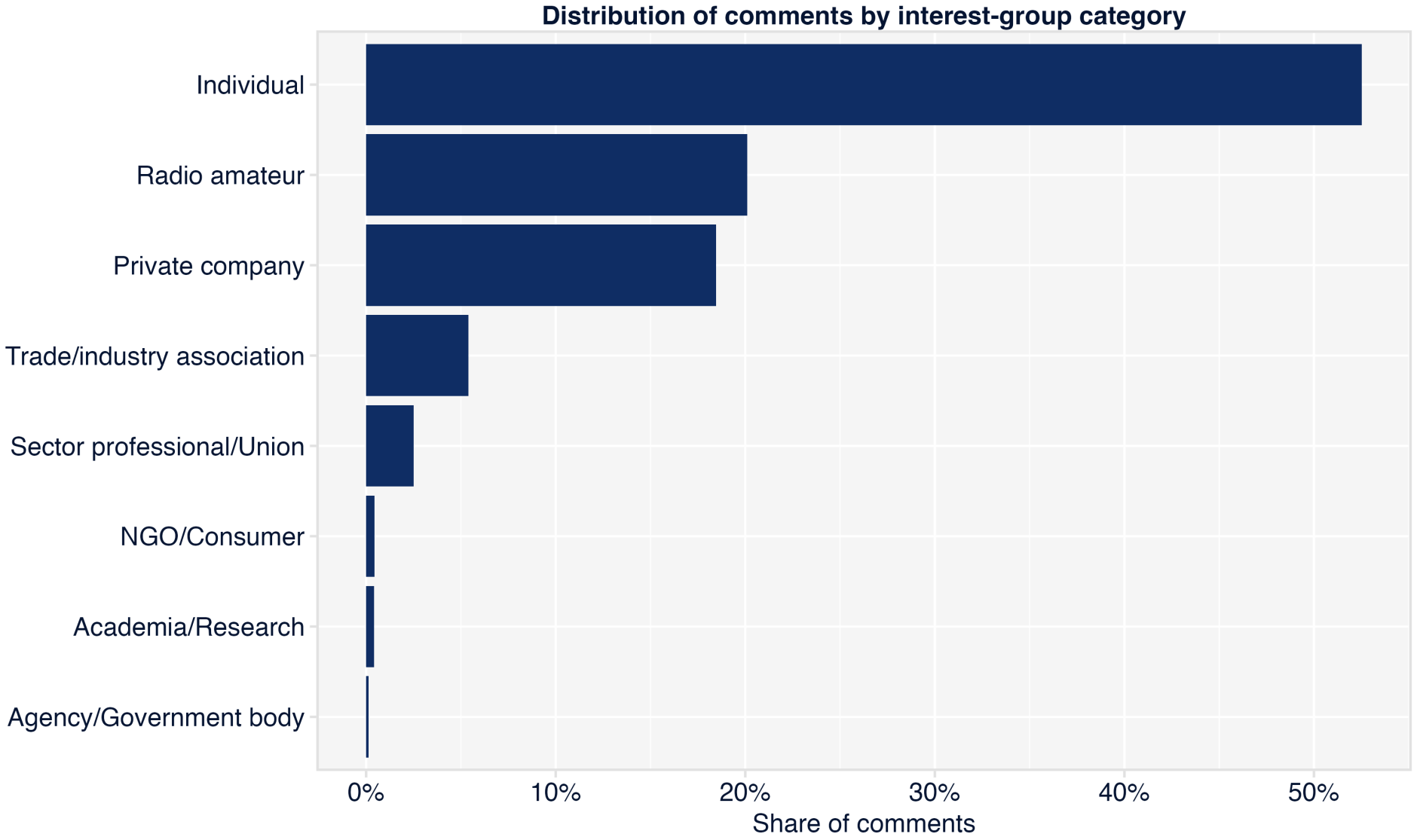
Next steps

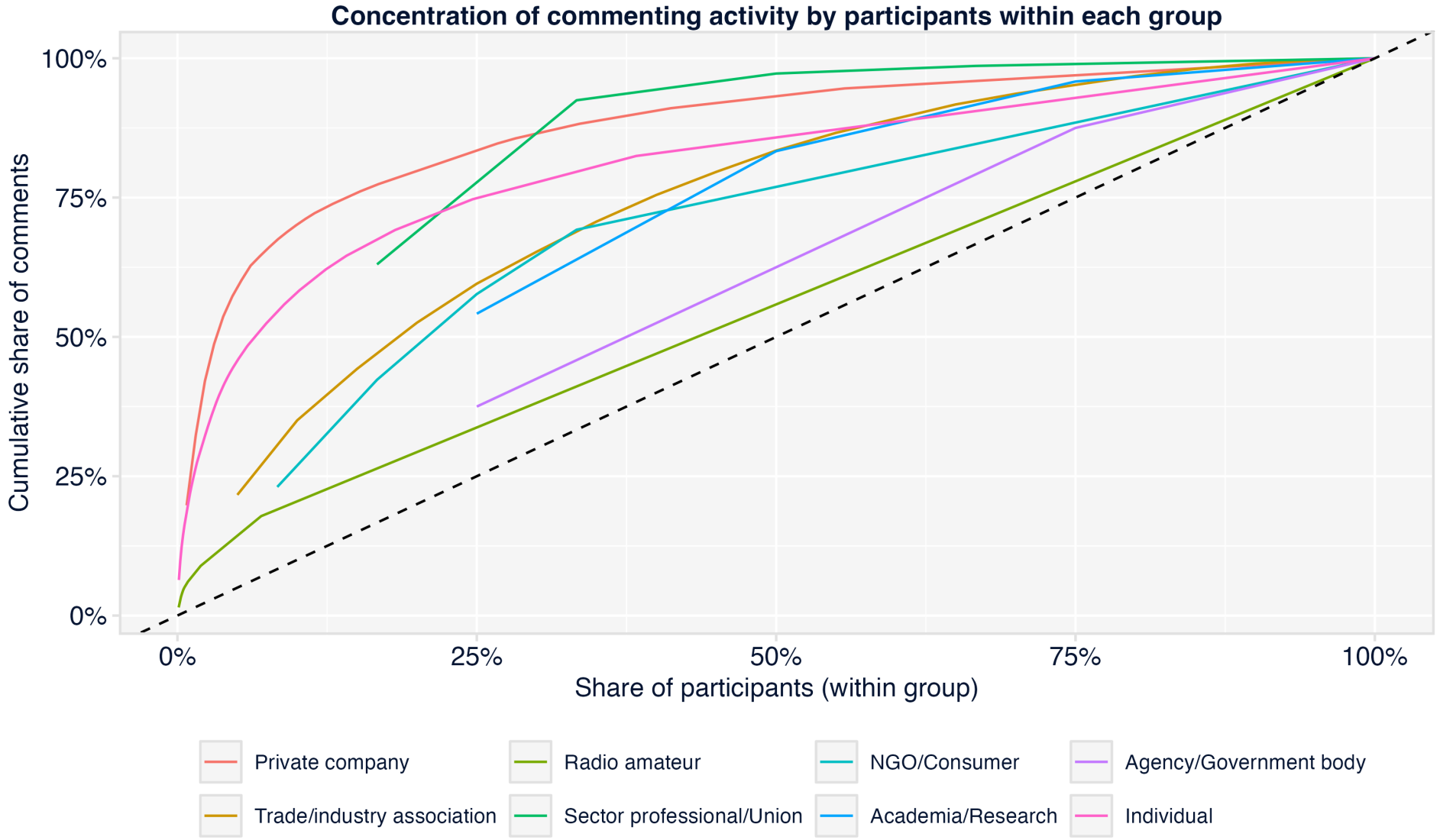
- **Chapter 5**: similarity/consistency within interest groups:
  - Formal similarity (language) x substantive similarity (request and arguments)
  - Agreement within consultations and agreement cross-consultations (most salient problemas and interests)
- **Chapter 6**: observing/reconstructing network patterns
  - Patterns of participation? Is there enough heterogeneity?
  - Should this be a part of the previous chapter.
- **Chapter 7**:
  - Implications: for theory, for applied research, for policy

Thank you

Results: Methodology and descriptive statistics

Composition of participants


Distribution of comments by interest-group category
Individual
Radio amateur
Private company
Trade/industry association
Sector professional/Union
NGO/Consumer
Academia/Research
Agency/Government body
0%
10%
20%
30%
40%
50%
Share of comments


Concentration of commenting activity by participants within each group
Cumulative share of comments
100%
75%
50%
25%
0%
0%
25%
50%
75%
100%
Share of participants (within group)
Private company
Radio amateur
NGO/Consumer
Agency/Government body
Trade/industry association
Sector professional/Union
Academia/Research
Individual

Regulatory direction of comments

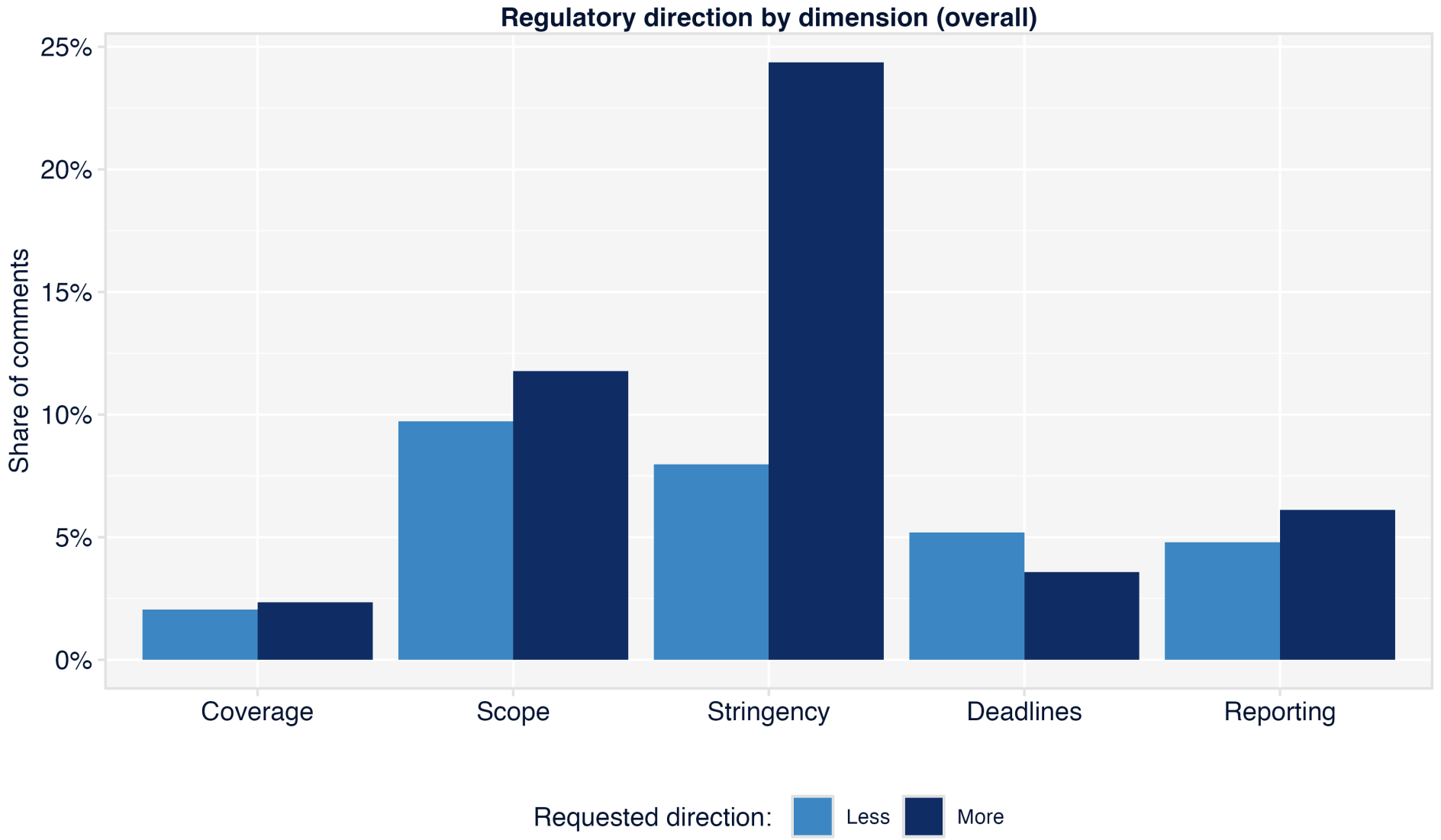
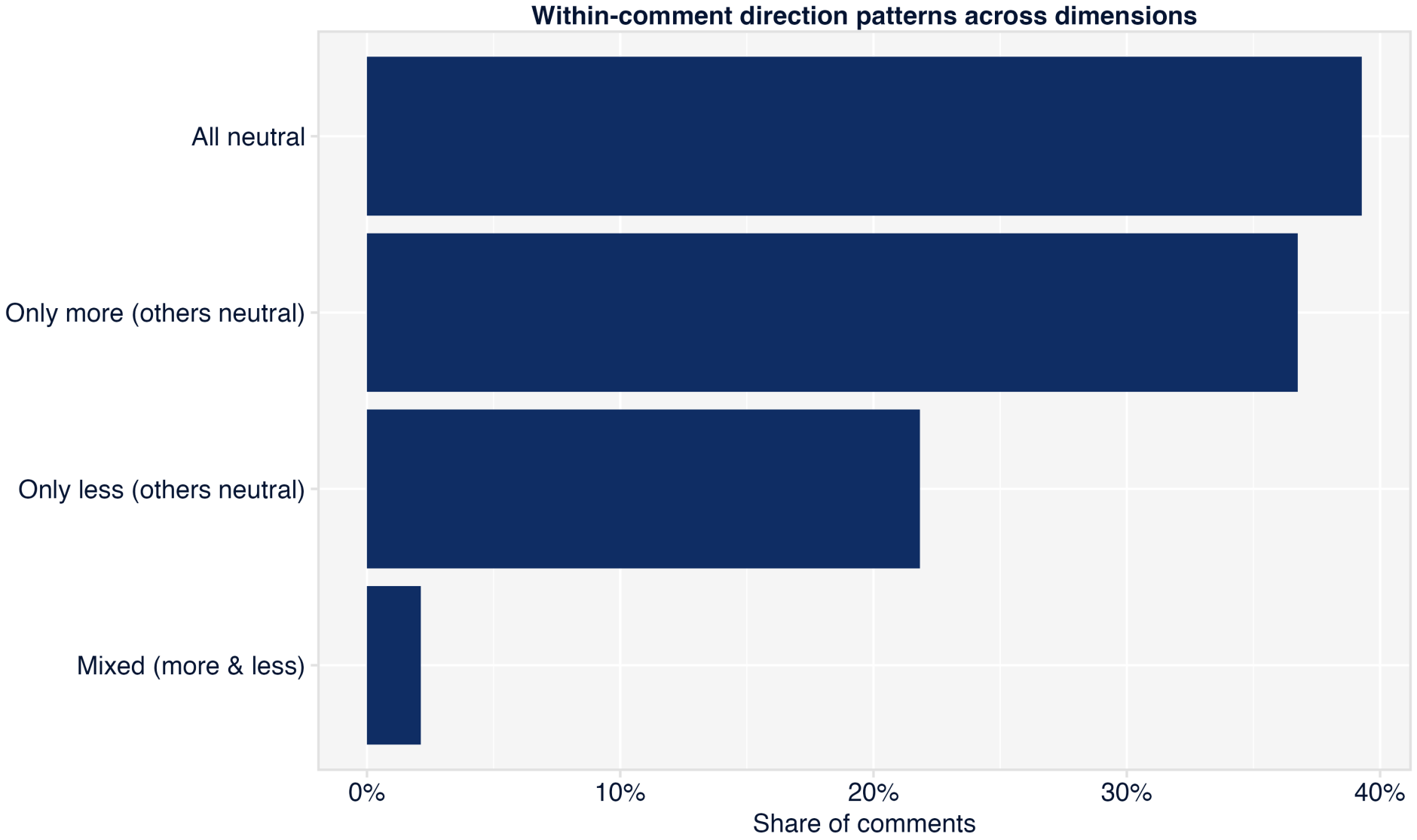
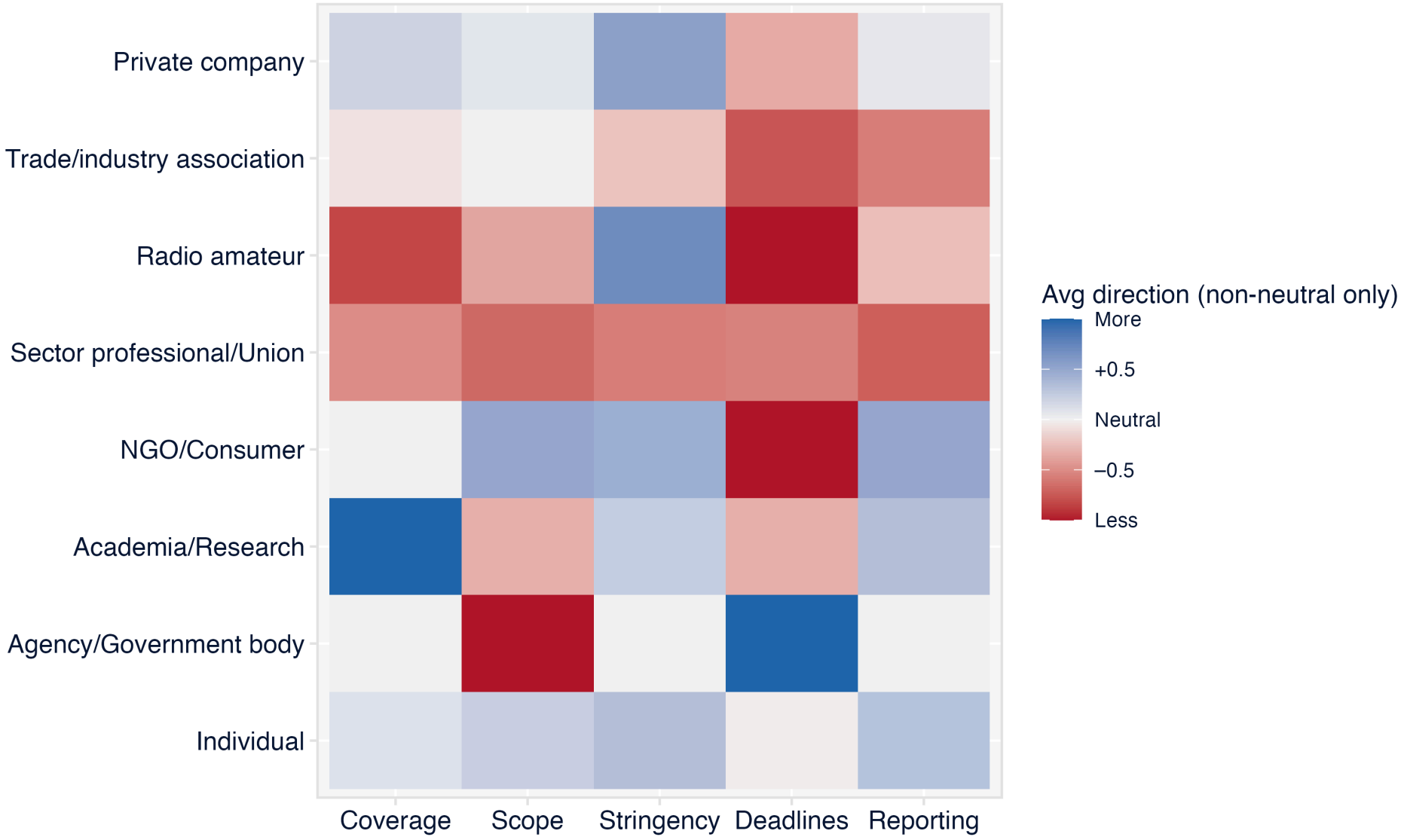

Regulatory direction by dimension (overall)
Share of comments
25%
20%
15%
10%
5%
0%
Coverage
Scope
Stringency
Deadlines
Reporting
Requested direction:
Less
More

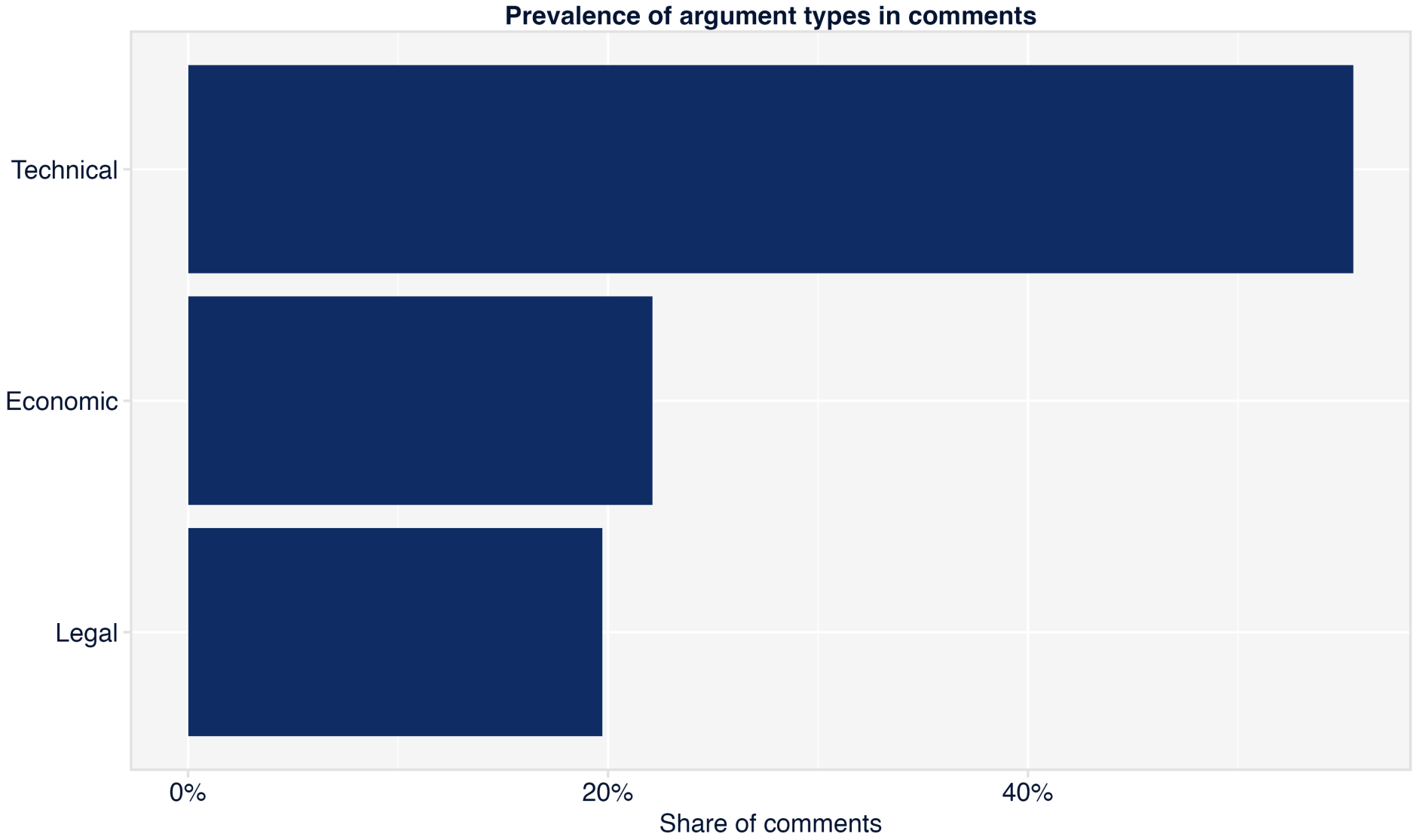
Table 3 – Regulatory direction dimensions addressed in the comments

Number of dimensions addressed in each comment	Number of comments	Percentage of Comments
0 dimensions	2284	39.3%
1 dimension	2726	46.9%
2 dimensions	631	10.9%
3 dimensions	151	2.6%
4 dimensions	22	0.4%
5 dimensions	0	0.0%


Within-comment direction patterns across dimensions
All neutral
Only more (others neutral)
Only less (others neutral)
Mixed (more & less)
0%
10%
20%
30%
40%
Share of comments


Private company
Trade/industry association
Radio amateur
Sector professional/Union
NGO/Consumer
Academia/Research
Agency/Government body
Individual
Coverage
Scope
Stringency
Deadlines
Reporting
Avg direction (non-neutral only)
More
+0.5
Neutral
−0.5
Less

Argument types in comments


Prevalence of argument types in comments
Technical
Economic
Legal
0%
20%
40%
Share of comments

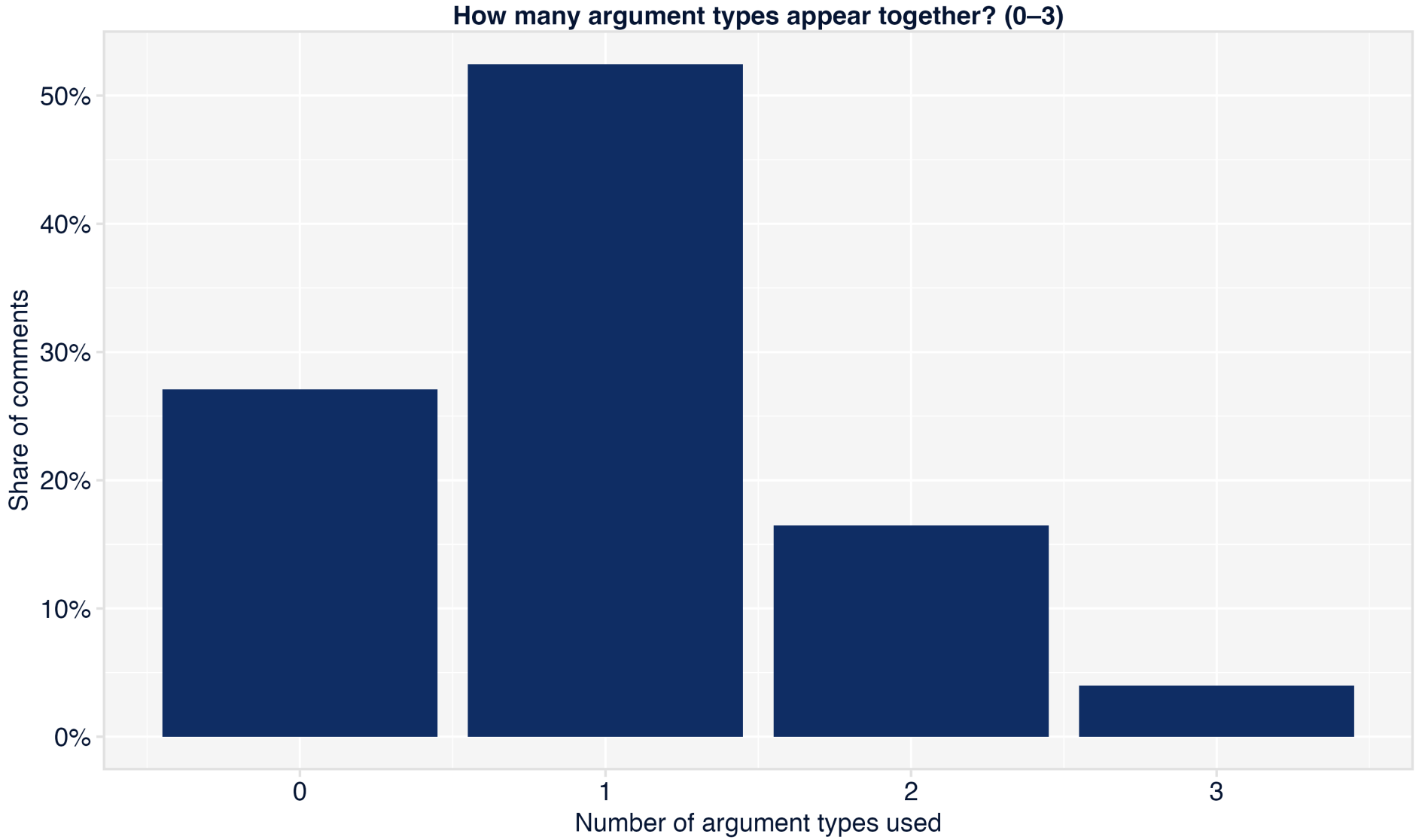
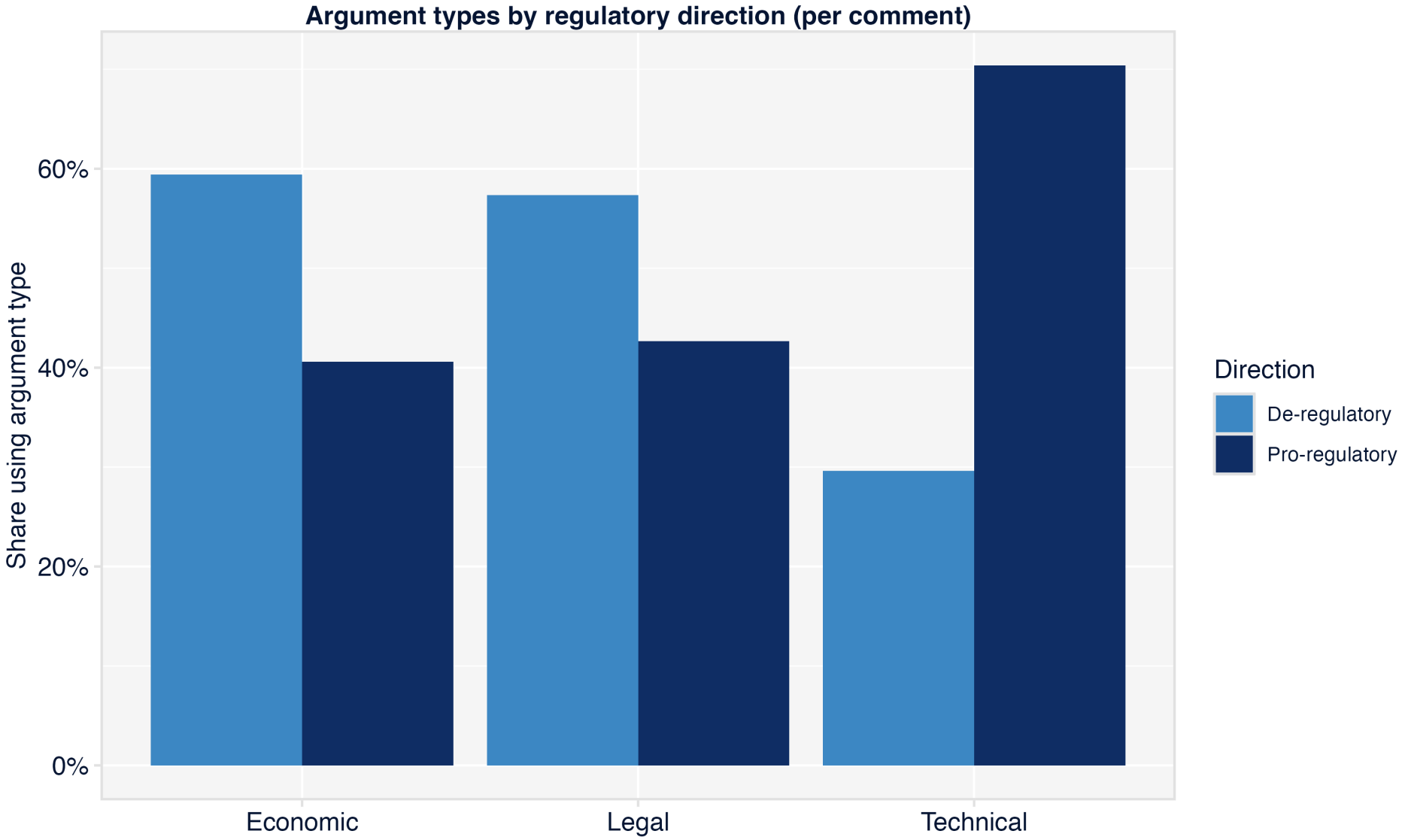
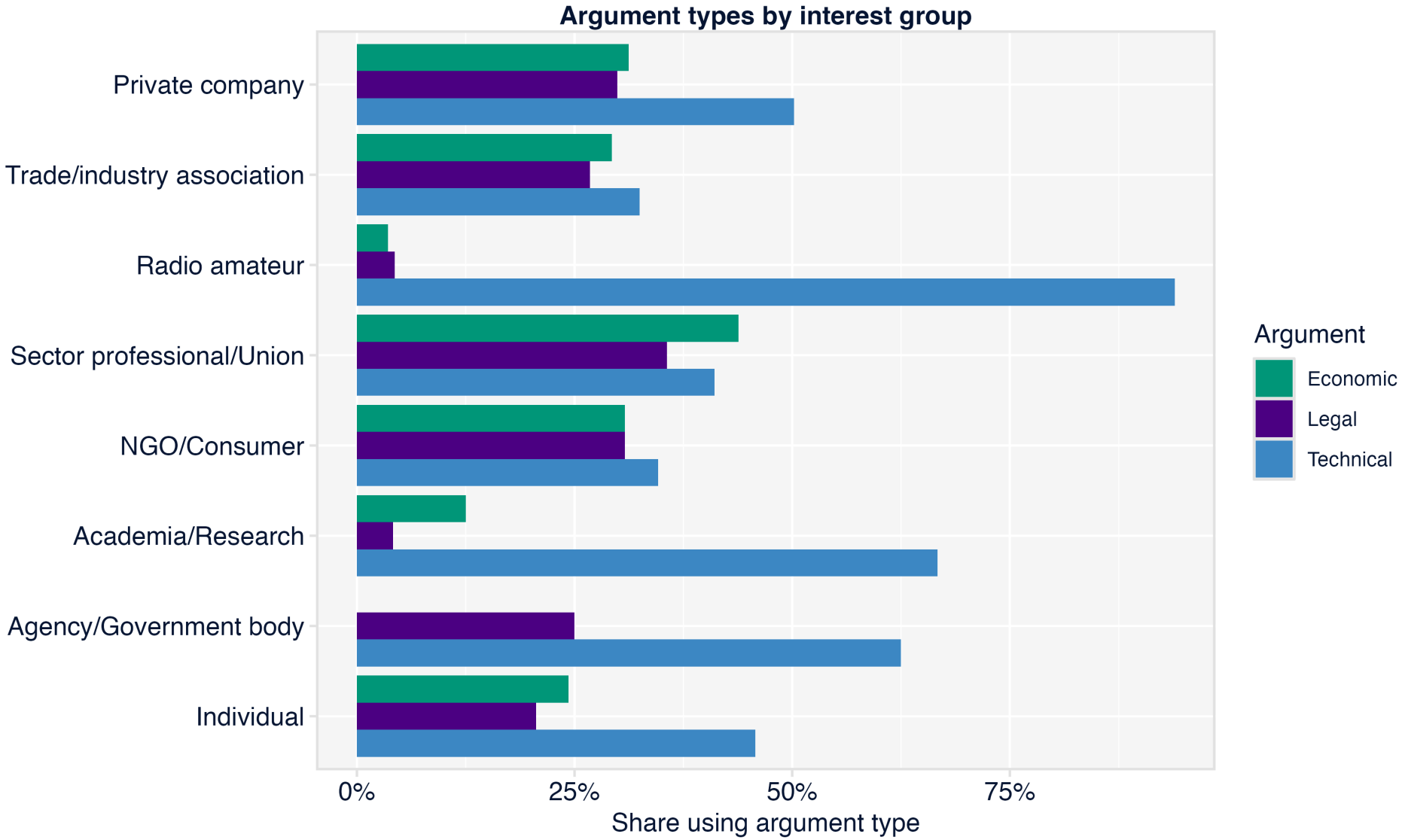

How many argument types appear together? (0–3)
Share of comments
50%
40%
30%
20%
10%
0%
0
1
2
3
Number of argument types used

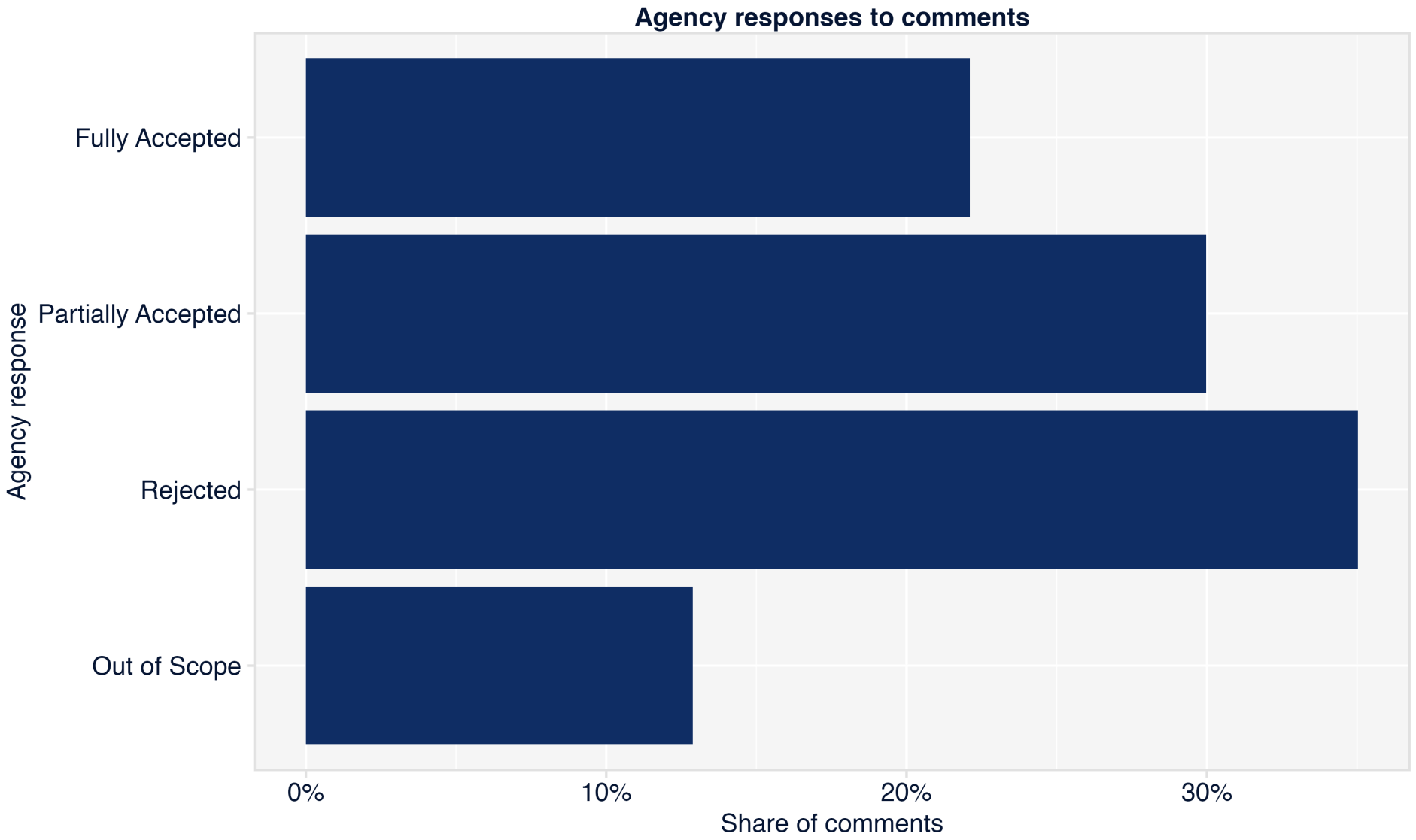
Table 4 – Concurrence of types of arguments

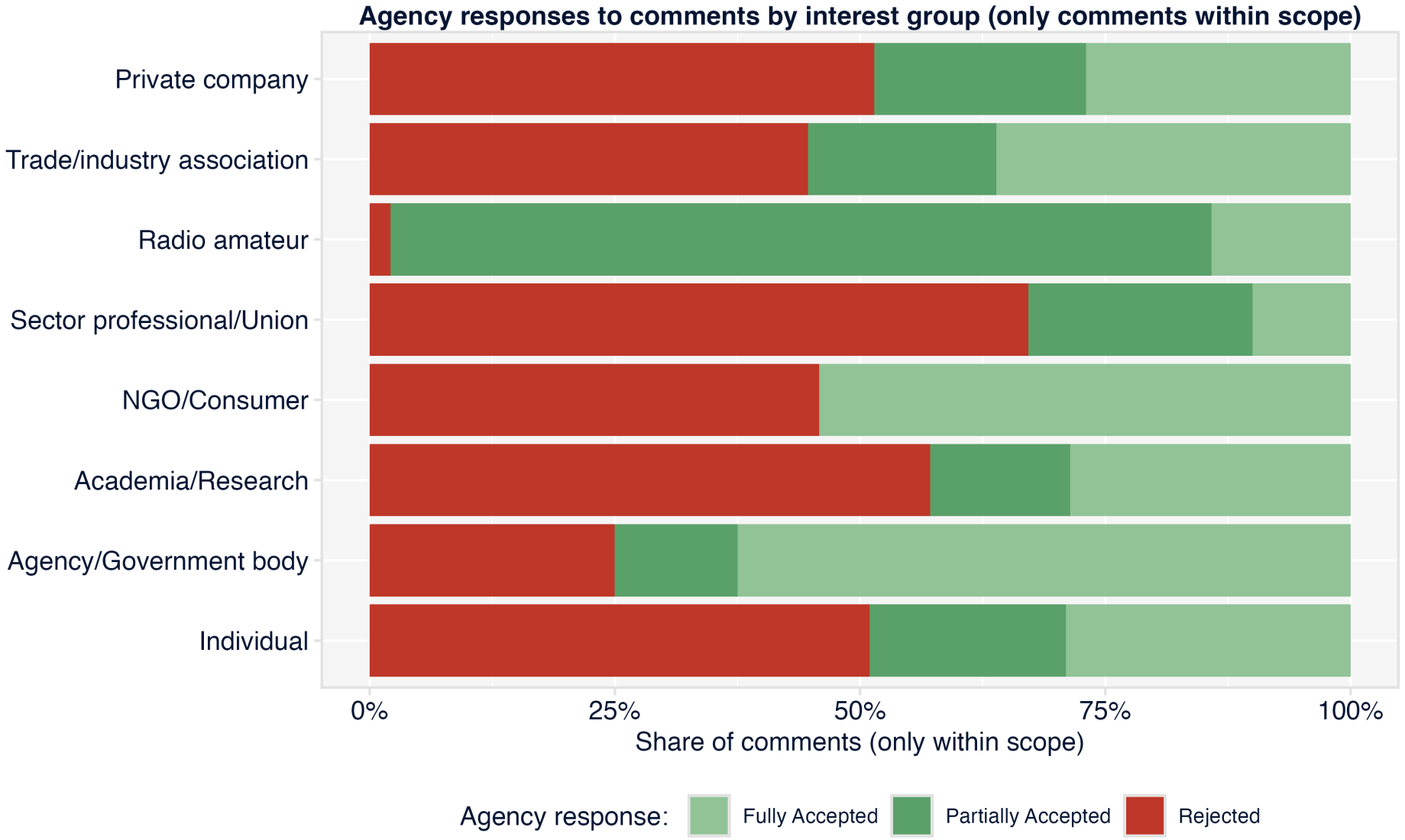
A	B	N Both	Jaccard (A,B)	P(B | A)	P(A | B)
Economic	Legal	451	0.228	0.351	0.393
Economic	Technical	688	0.18	0.535	0.213
Legal	Technical	514	0.133	0.448	0.159

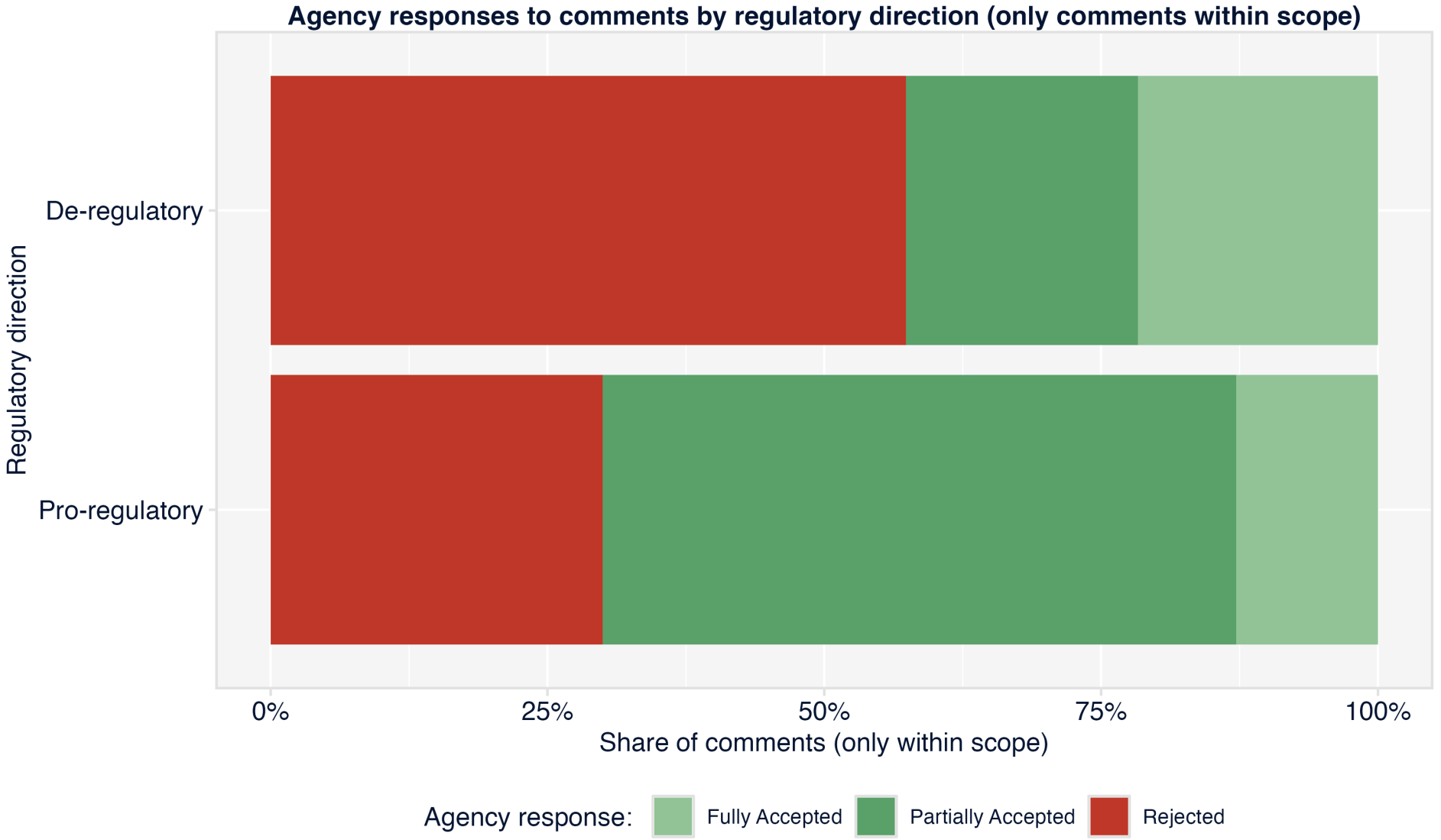

Argument types by regulatory direction (per comment)
Share using argument type
60%
40%
20%
0%
Economic
Legal
Technical
Direction
De-regulatory
Pro-regulatory

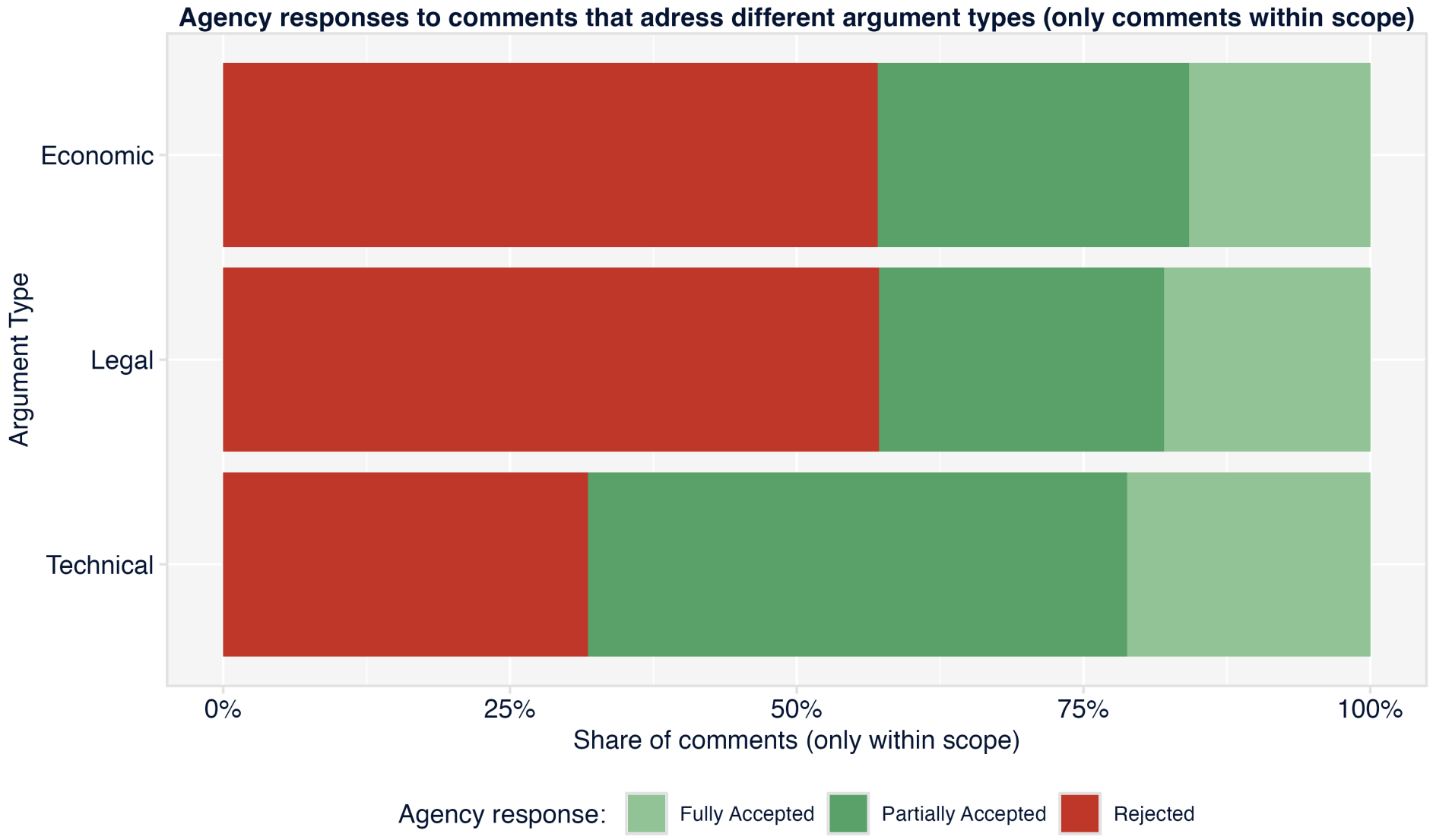

Argument types by interest group
Private company
Trade/industry association
Radio amateur
Sector professional/Union
NGO/Consumer
Academia/Research
Agency/Government body
Individual
0%
25%
50%
75%
Share using argument type
Argument
Economic
Legal
Technical

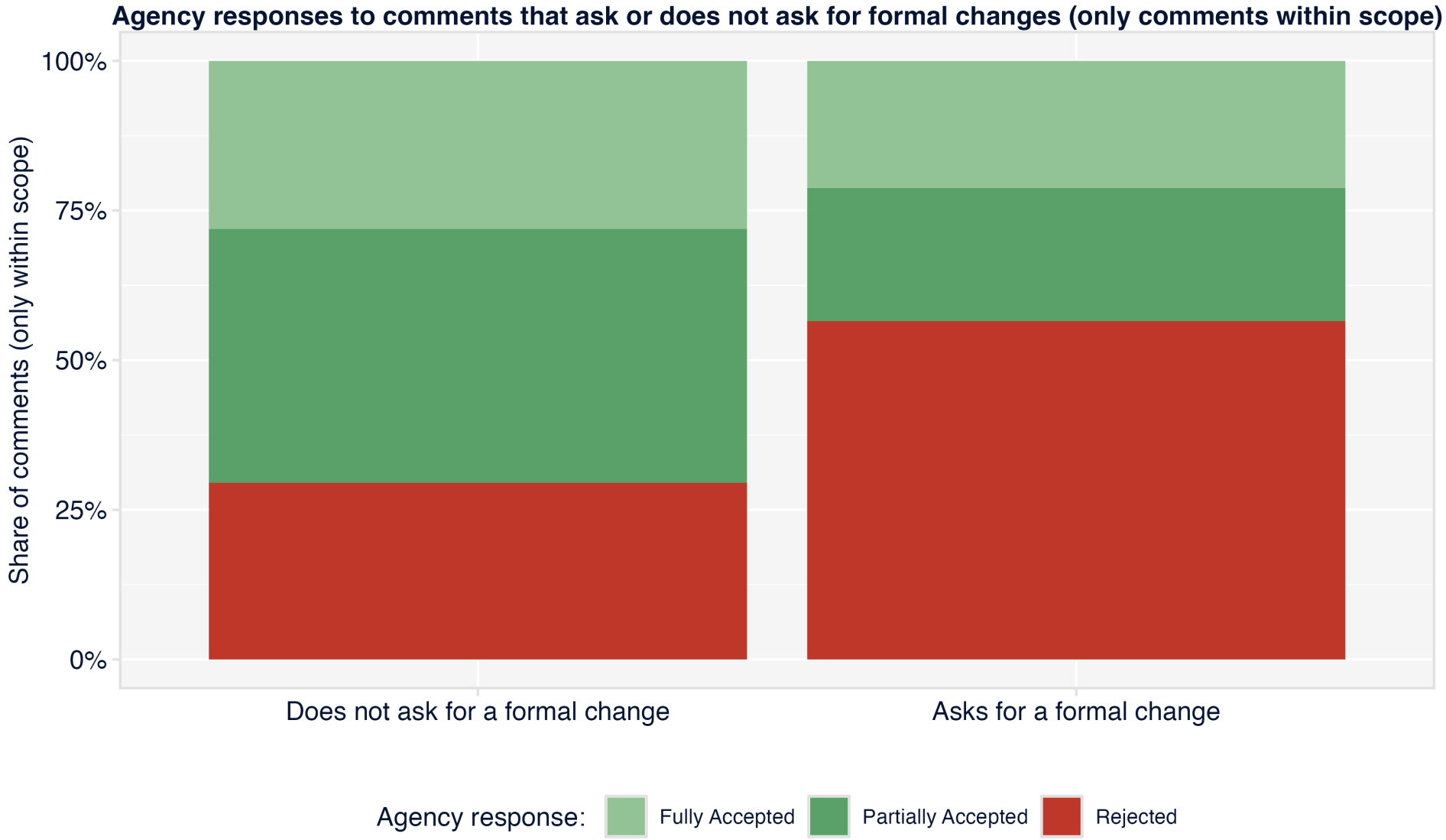
Agency's responses to comments


Agency responses to comments
Agency response
Fully Accepted
Partially Accepted
Rejected
Out of Scope
0%
10%
20%
30%
Share of comments


Agency responses to comments by interest group (only comments within scope)
Private company
Trade/industry association
Radio amateur
Sector professional/Union
NGO/Consumer
Academia/Research
Agency/Government body
Individual
0%
25%
50%
75%
100%
Share of comments (only within scope)
Agency response:
Fully Accepted
Partially Accepted
Rejected


Agency responses to comments by regulatory direction (only comments within scope)
Regulatory direction
De-regulatory
Pro-regulatory
0%
25%
50%
75%
100%
Share of comments (only within scope)
Agency response:
Fully Accepted
Partially Accepted
Rejected


Agency responses to comments that adress different argument types (only comments within scope)
Argument Type
Economic
Legal
Technical
0%
25%
50%
75%
100%
Share of comments (only within scope)
Agency response:
Fully Accepted
Partially Accepted
Rejected


Agency responses to comments that ask or does not ask for formal changes (only comments within scope)
Share of comments (only within scope)
100%
75%
50%
25%
0%
Does not ask for a formal change
Asks for a formal change
Agency response:
Fully Accepted
Partially Accepted
Rejected

Results: Chapter 4

Predictive modelling

Table 5 – Performance of predictive models on the scope classification task (validation scores)

Algorithm	Accuracy of different text representations			Best F1 Score (Macro)
	TF-IDF	BERT	GPT-3	
Decision Tree	0.76	0.75	0.75	0.76
Logistic Regression	0.76	0.8	0.85	0.85
Random Forest	0.82	0.82	0.83	0.83
AdaBoost	0.8	0.81	0.86	0.86
MLP Classifier	0.8	0.82	0.87	0.87
K-Nearest Neighbors	0.83	0.82	0.89	0.89
Support Vector Machine	0.8	0.85	0.89	0.89

Table 6 – Performance of predictive models on the impact classification task (validation scores)

Algorithm	Accuracy of different text representations			Best F1 Score (Macro)
	TF-IDF	BERT	GPT-3	
Separated grouping (Fully accepted vs. Rejected) -> N = 2570				
Decision Tree	0.71	0.68	0.68	0.71
Logistic Regression	0.73	0.77	0.8	0.8
Random Forest	0.75	0.78	0.82	0.82
AdaBoost	0.73	0.73	0.77	0.77
MLP Classifier	0.76	0.8	0.83	0.83
K-Nearest Neighbors	0.75	0.77	0.83	0.83
Support Vector Machine	0.76	0.8	0.84	0.84
Combined grouping (Fully and partially accepted vs. Rejected) -> N = 4074				
Decision Tree	0.77	0.7	0.7	0.77
Logistic Regression	0.72	0.75	0.77	0.77
Random Forest	0.78	0.78	0.79	0.79
AdaBoost	0.74	0.74	0.78	0.78
MLP Classifier	0.77	0.79	0.79	0.79
K-Nearest Neighbors	0.75	0.77	0.82	0.82
Support Vector Machine	0.79	0.79	0.83	0.83

Explanatory modelling

Table 7 – Sequence of explanatory models (scope and impact)

Model	Specification
M0	Interest Groups (Identity)
M1	Identity + Embeddings (PCA components)
M2	Embeddings
M3	Content Variables (argument types + regulatory direction)
M4	Embeddings + content variables
M5	Identity + Embeddings + Content Variables
M6	Identity + Predicted Probabilities
M7	Predicted Probabilities
M8	Predicted Probabilities + Content Variables
M9	Identity + Predicted Probabilities + Content Variables

Table 8 – Performance of the explanatory models for scope

Model	Description	AIC	McFadden R2	Tjur R2	AUC
M0	Identity	-945.900	1903.801	0.089	0.119
M1	Identity + Embeddings	-369.445	950.890	0.644	0.694
M2	Embeddings	-372.432	946.865	0.641	0.691
M3	Content Variables	-869.771	1759.542	0.162	0.212
M4	Embeddings + Content	-363.388	946.777	0.650	0.698
M5	Identity + Embeddings + Content	-359.883	949.766	0.653	0.701
M6	Identity + Predicted Probabilities	-160.294	334.589	0.846	0.895
M7	Predicted Probabilities	-161.554	327.109	0.844	0.895
M8	Predicted Probabilities + Content	-152.541	327.081	0.853	0.900
M9	Identity + Predicted Probabilities + Content	-150.490	332.979	0.855	0.900

Table 12 – Performance of the explanatory models for impact

Model	Description	AIC	McFadden R2	Tjur R2	AUC
M0	Identity	4914.011	0.133	0.153	0.661
M1	Identity + Embeddings	3691.218	0.385	0.438	0.875
M2	Embeddings	3706.638	0.379	0.433	0.872
M3	Content Variables	5130.330	0.095	0.126	0.706
M4	Embeddings + Content	3711.236	0.382	0.435	0.874
M5	Identity + Embeddings + Content	3694.975	0.387	0.441	0.876
M6	Identity + Predicted Probabilities	1559.914	0.727	0.798	0.975
M7	Predicted Probabilities	1559.300	0.725	0.798	0.976
M8	Predicted Probabilities + Content	1565.010	0.727	0.799	0.976
M9	Identity + Predicted Probabilities + Content	1568.222	0.729	0.799	0.976