Seventh Circuit Thesis Brief

Judicial Relief in Seventh Circuit Criminal Appeals

Research question

Where does visible disparity appear in Seventh Circuit criminal sentencing appeals from 2020 to 2025: individual judges, case posture, publication status, doctrine-heavy cases, or the institutional structure of appellate review?

Corpus and pipeline

- Collected 6,011 raw Seventh Circuit records.
- Identified 1,853 criminal opinion downloads.
- Deduplicated the corpus to 1,591 unique criminal sentencing decisions.
- Processed a corpus of approximately 3.78 million words.
- Built a judge-identifying dataset covering panel membership, publication status, posture, issue type, offense category, outcome, and relief markers.

LLM extraction and validation

- JSON-schema enforced outputs.
- Five thematic extraction passes.
- 12 model configurations tested.
- 15 schema iterations.
- Manual review against audited fields.
- 95%+ agreement across audited fields for the strongest configuration.

The goal was not to let an LLM decide legal outcomes. The goal was to convert unstructured appellate opinions into reviewable structured data at a scale manual coding alone could not support.

Model and finding

The analysis used Bayesian hierarchical generalized linear modeling with judge and case-level structure. Apparent disparity narrowed once the model separated publication status, case posture, routine nonprecedential dispositions, and doctrine-heavy published decisions.

Core insight

Not all appellate opinions are equal evidence. Published doctrine and routine nonprecedential review perform different institutional functions. If they are pooled together, the resulting aggregate can make disparity appear judge-centered when it is substantially track-centered.

Why it matters

Legal insight: visible appellate disparity in sentencing review may be produced less by individual judge preference than by institutional sorting, deferential review, and publication-track structure.

Technical method: legal datasets can be built from messy judicial text through structured LLM extraction when the workflow is schema-bound, validated, and designed for legal auditability.

What this demonstrates

This thesis demonstrates empirical legal research, federal appellate domain knowledge, large-corpus processing, LLM extraction design, validation discipline, and the ability to translate legal doctrine into structured data without losing institutional context.