

STAGE 1: GENERATION

\mathcal{D}_{syn} Dataset

$N = 1,000$ Profiles
Stratified Sampling
(FinTech, Retail, Mfg)

Distributions:
 $R_{shadow} \sim \text{LogNormal}$

STAGE 2: SIMULATION

Scoring Algorithm

Apply \mathcal{M}_{PDS} Logic
Calculate S_{total}
Seed = 42

Output:
Risk Score Distribution

STAGE 3: CAUSAL

Structural Eq. Modeling

DAG Mapping
Path Analysis

"Does structure predict risk?"

STAGE 4: STRESS TEST

LockBit 3.0 Sim

Markov Chain Model

Attack Vectors:
(Phishing \rightarrow RDP \rightarrow Encrypt)

Kill-Chain Validation

Validated
Model