AI in Project Risk Management (Cont.)

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Research Question:

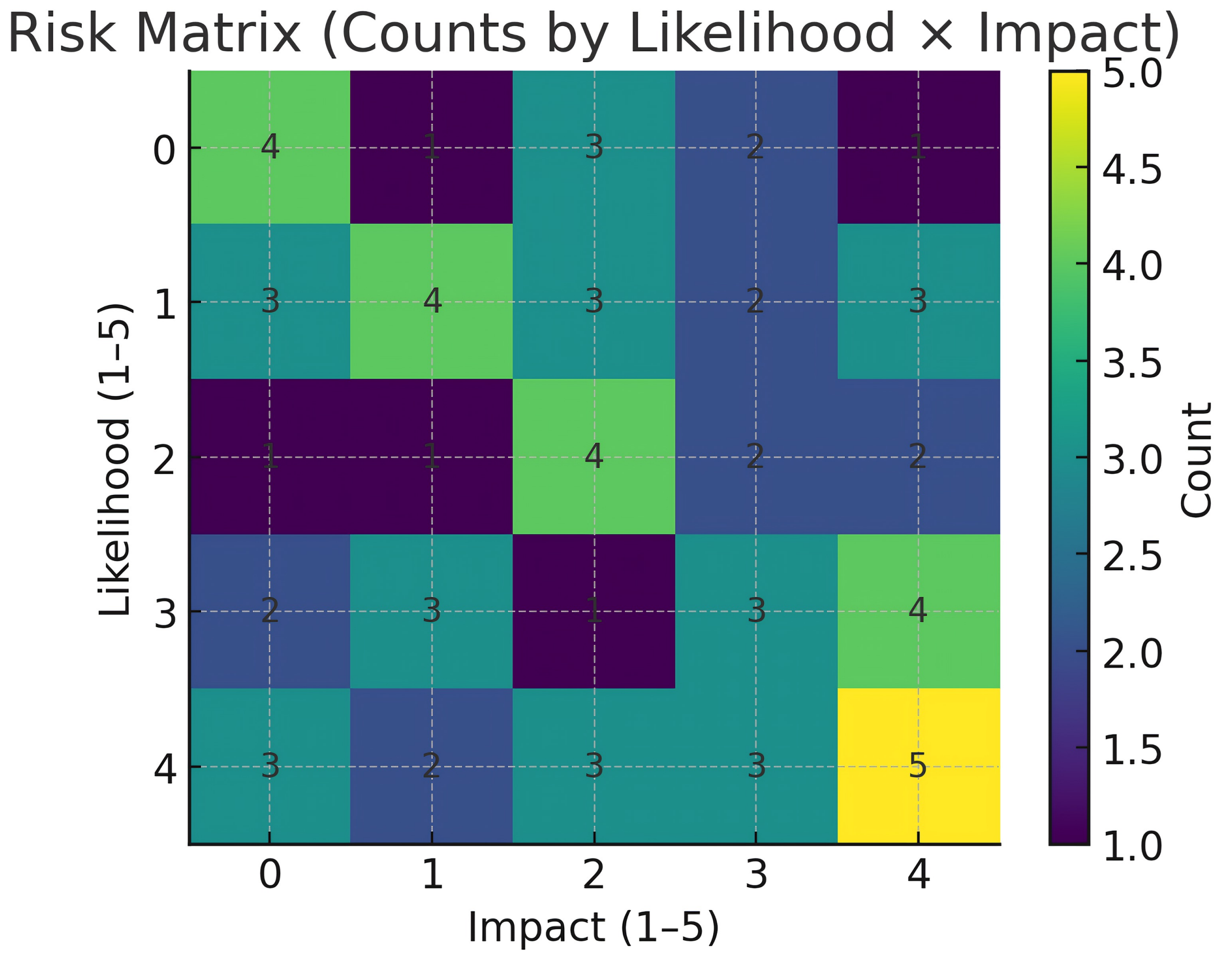
What is the most cost-effective and objective software risk-management tool or approach for budget-limited startups, including traditional tools and generative AI models?

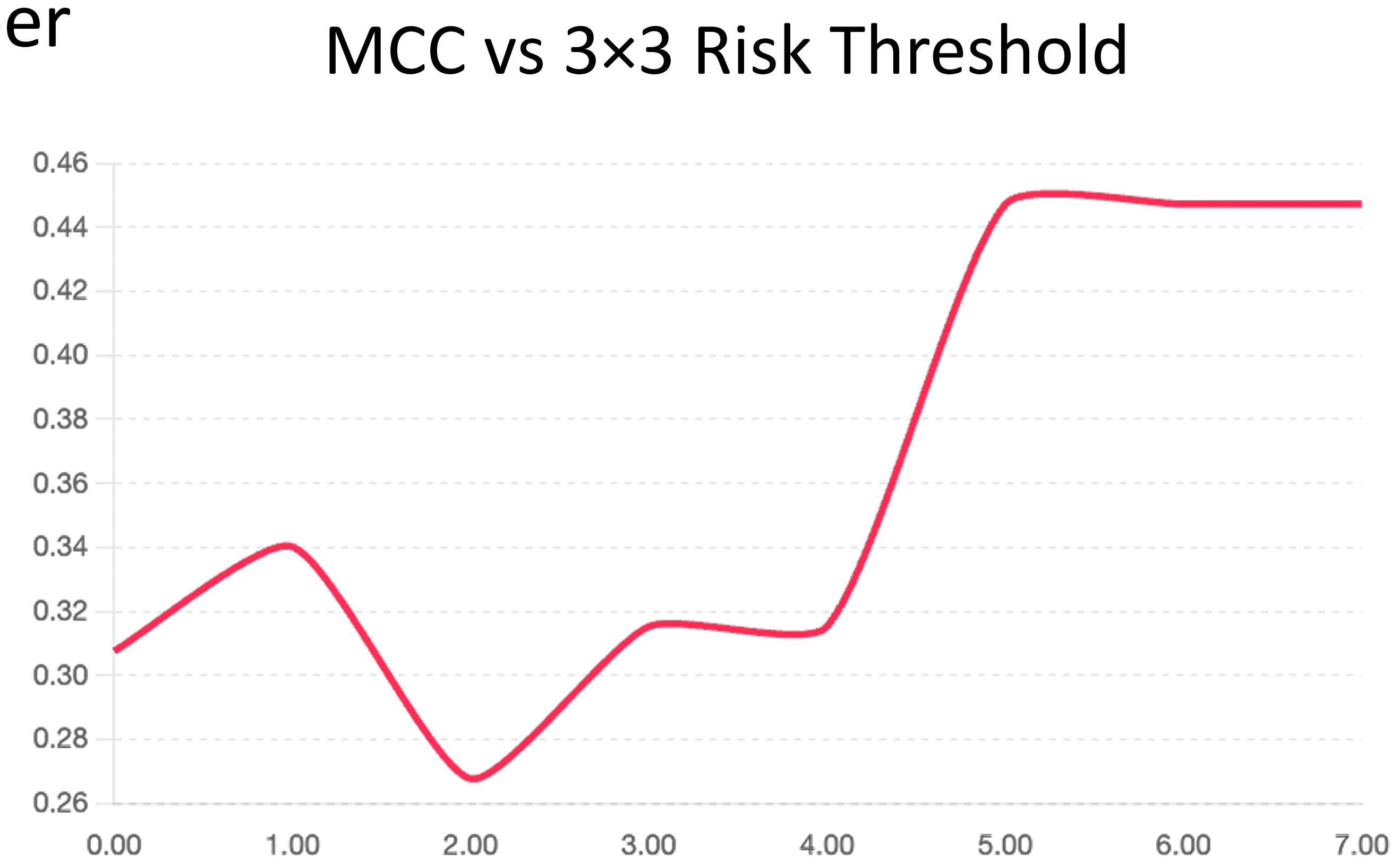
Background:

- Traditional risk management in software is costly, slow, and prone to human error
- These issues can cause delays, budget problems, and quality issues in projects
- Generative AI, like ChatGPT-5, may offer a faster and cheaper alternative
- This project compares AI tools with traditional and manual methods
- This continuation builds on earlier work by moving from concepts to a Jira-based evaluation pipeline and adding quantitative metrics (F1 and MCC)

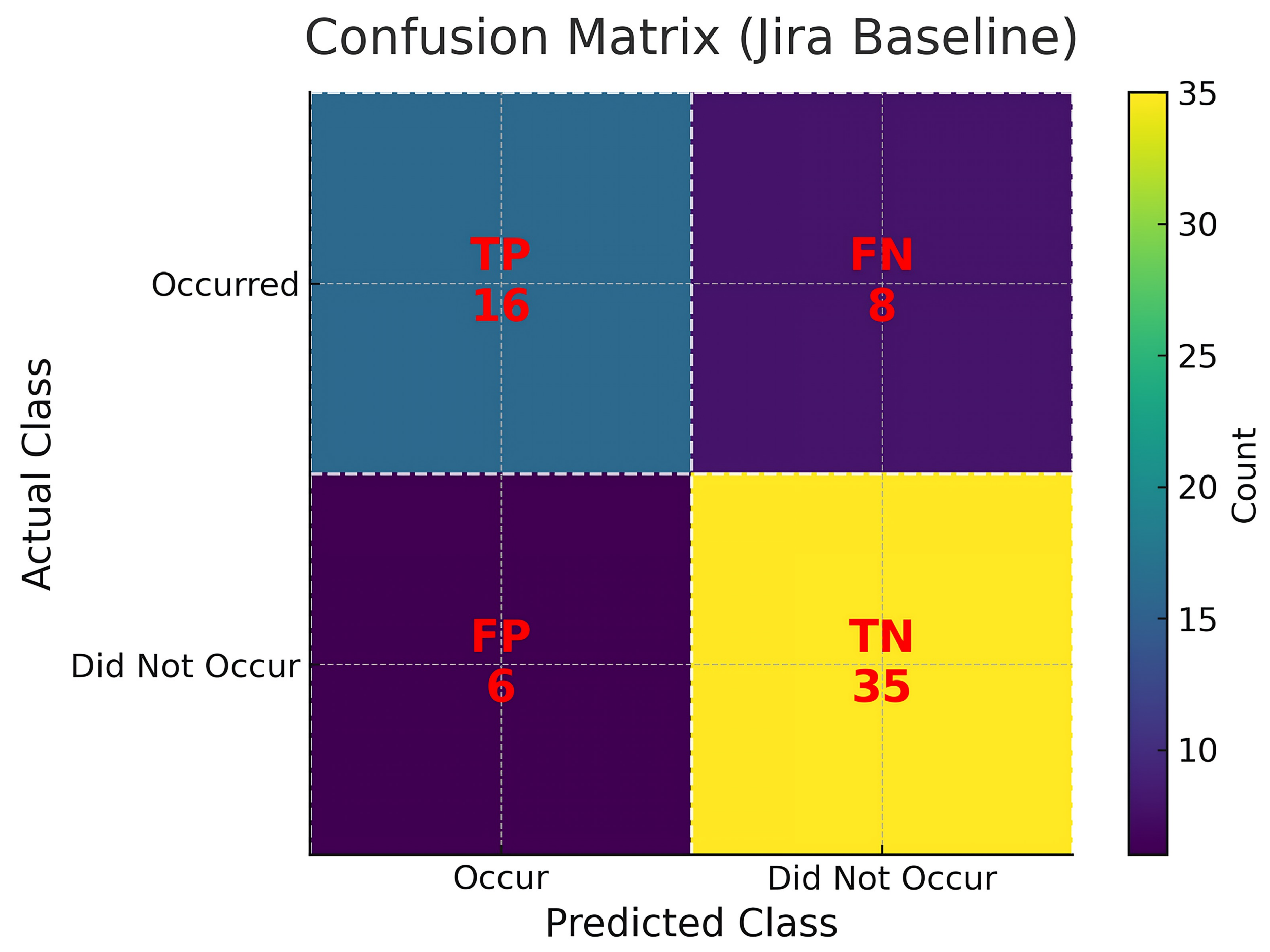
Process/Methods:

Build a 65-issue synthetic risk dataset in Jira (Likelihood, Impact, Risk Score, Actual Outcome) via CSV. Evaluate a traditional baseline by thresholding Risk Score (≥ T), using JQL to count TP/FP/FN/TN and compute MCC/F1 (with threshold tuning). Pilot a Jira risk add-on; due to locked fields, mirror a 3×3 severity/probability mapping in Jira-native fields for analysis. Add AI Probability/Prediction fields to score the same issues with a generative-AI workflow. Compare accuracy (MCC/F1), effort/time, and cost-prioritizing startup needs.





Sample Synthetic Dataset Created with ChatGPT



Progress/Findings:

Jira baseline: Predict "will occur" when Likelihood×Impact ≥ 12. On 65 risks: 16 hits, 6 false alarms, 8 missed risks, 35 correct non-events → MCC = 0.53 (overall match quality; 0=coin-flip, 1=perfect), F1 = 0.70 (balances precision & recall). hit = TP, false alarm = FP, missed risk = FN, correct non-event = TN.

AI pilot (ChatGPT-5): Reads the same risks and outputs a probability; with ≥ 0.5 = "will occur" → MCC ≈ 0.61 (higher = better), indicating better overall accuracy with less manual setup.

Jira + AI wins: Combining Jira for data/traceability with ChatGPT-5 for scoring triage yields the best accuracy/effort trade-off: higher MCC than Jira-only and far fewer manual steps than add-ons.

Add-on reality check: Current Jira risk add-ons (e.g., SoftComply) have locked fields, limited automation/API docs, and CSV backfills, making them more time-consuming and costlier to operate than a Jira+AI pipeline.

Cost & effort: Jira+AI requires no proprietary risk suite and minimal configuration; setup time is mostly prompt + one export/import cycle, making it more cost-effective for startups than add-on-heavy workflows.

Deliverable in progress: A developer manual is being authored (Jira setup, CSV templates, JQL for TP/FP/FN/TN, MCC calculator, and AI-scoring instructions) so teams can reproduce risk assessment and MCC benchmarking quickly.

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