

# Statistical Benchmark Report

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This report provides quantitative evaluation results for NDCG@k and faithfulness, correlation diagnostics, outlier detection, and statistical visualizations.

# 1. Summary Statistics

|                 |           |
|-----------------|-----------|
| files           | 100.0000  |
| ndcg@k mean     | 1.0000    |
| ndcg@k ci95 lo  | 1.0000    |
| ndcg@k ci95 hi  | 1.0000    |
| faith mean      | 0.6307    |
| faith ci95 lo   | 0.5935    |
| faith ci95 hi   | 0.6657    |
| ndcg@k median   | 1.0000    |
| faith median    | 0.6752    |
| ndcg@k std      | 0.0000    |
| faith std       | 0.1796    |
| bootstrap iters | 2000.0000 |
| iqr k           | 1.5000    |
| z thresh        | 3.0000    |
| faith high thr  | 0.5000    |
| faith mid thr   | 0.2500    |

## 2. Correlation and Outlier Analysis

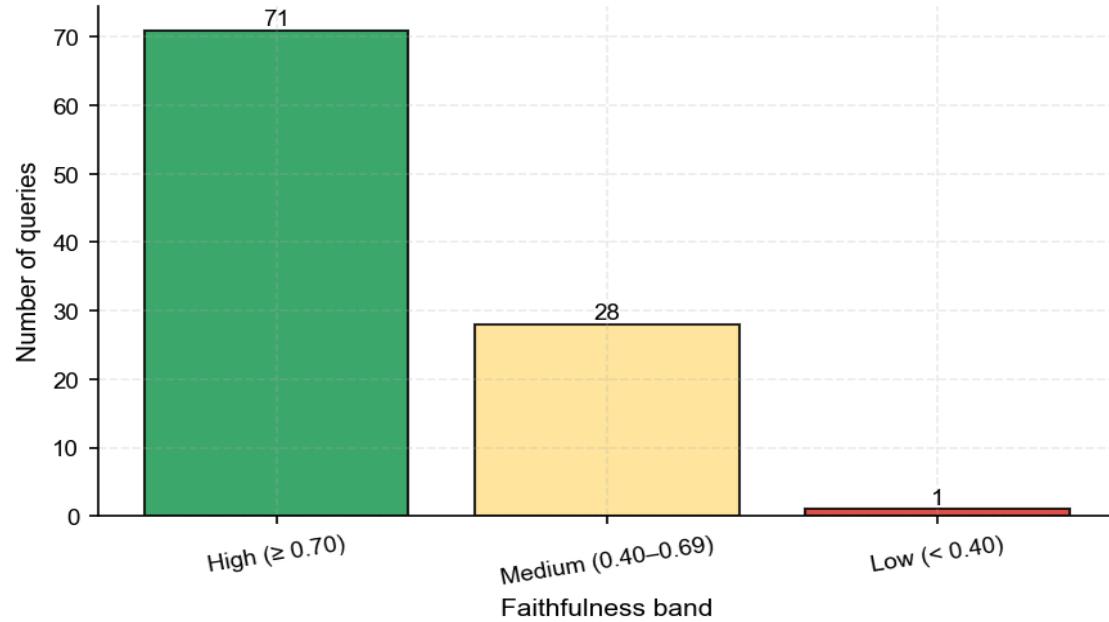
| Metric Pair     | Correlation | p-value |
|-----------------|-------------|---------|
| Pearson r       | nan         | nan     |
| Spearman $\rho$ | nan         | nan     |

No outliers detected.

### 3. Visual Analytics

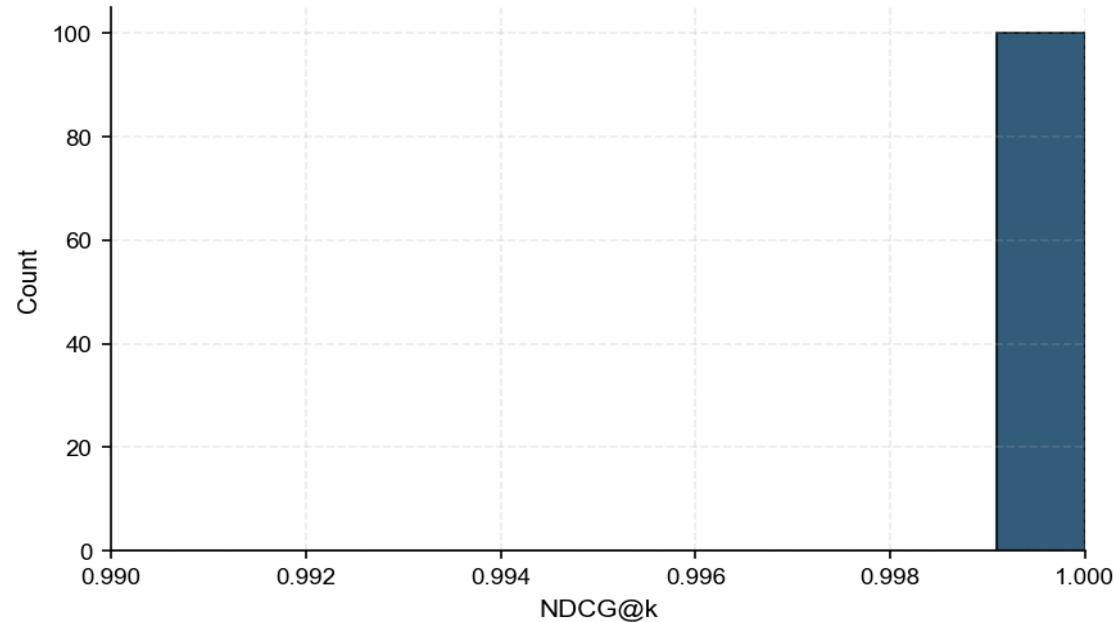
**faithfulness bands global.png**

Figure 2: Faithfulness bands across all queries



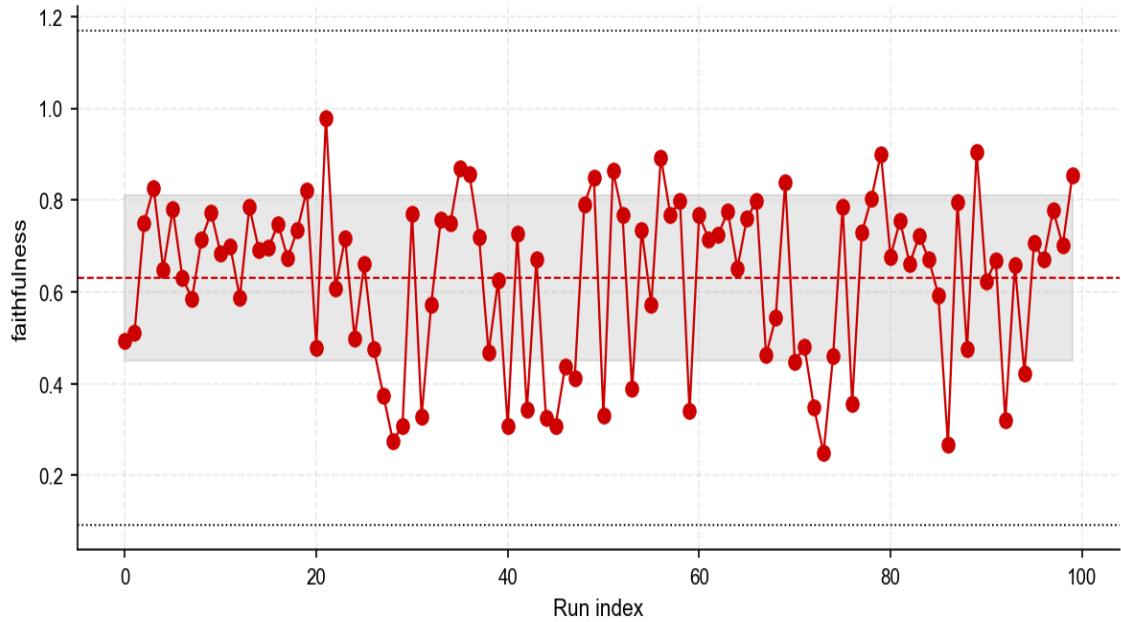
**hist ndcg.png**

Figure 1: Distribution of NDCG@k



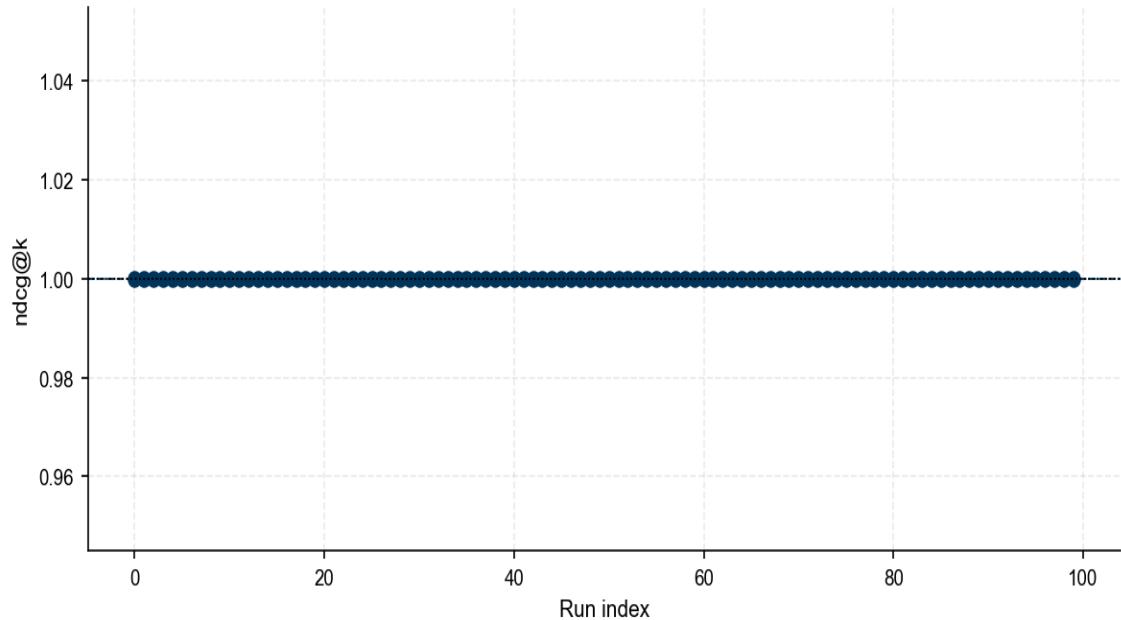
**run order faithfulness.png**

Figure 5: Run-order chart for faithfulness



### run order ndcg@k.png

Figure 4: Run-order chart for ndcg@k



### scatter ndcg vs faithfulness.png

Figure 3: Scatter NDCG@k vs Faithfulness ( $r=\text{nan}$ ,  $\rho=\text{nan}$ )

