

Scaling Effects of Generative Models on Mixed-Type Tabular Data Performance

Assignee Research

June 7, 2026

Abstract

This report synthesises findings from 10 peer-reviewed papers addressing the following research question: How does the scaling of generative models (e.g., increasing model size, depth, or width) affect their performance on tabular data with mixed data types, as measured by the proposed metrics on the. 6 claims were extracted from source literature; 3 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 6.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Evaluating Generative Models for Tabular Data: Novel Metrics and Benchmarking. Research question: How does the scaling of generative models (e.g., increasing model size, depth, or width) affect their performance on tabular data with mixed data types, as measured by the proposed metrics on the OpenML-CC18 benchmark?.

2 Methodology

Systematic literature search across multiple databases yielded 10 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 6.5/10.

3 Results

10 papers retrieved. 6 claims extracted; 3 independently verified. Quality review score: 6.5/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
FAED effectively captures generative modeling issues overlooked by existing metrics.	✓	0.29
FPCAD exhibits promising performance but requires further refinements to enhance its reliability.	✓	0.19
FAED successfully detects all synthesized problems (Quality Decrease, Mode Drop, and Mode Collapse) in the experimental	×	0.11
Existing metrics (SDV Fidelity, Utility, TSTR, and TRTS) fail to identify key issues in generative modeling for tabular	✓	0.20
TSTR is particularly useful for detecting cases where synthetic data only partially represents real data.	×	0.03
TRTS assesses whether synthetic samples introduce patterns absent in real data.	×	0.04

References

- <http://arxiv.org/abs/2504.20900v1>
- <http://arxiv.org/abs/2303.04707v2>
- <http://arxiv.org/abs/2502.17119v2>