

# Scaling Effects of Language Models on Logical Reasoning Performance

Assignee Research

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## Abstract

This report synthesises findings from 11 peer-reviewed papers addressing the following research question: What is the effect of model size on language model performance on logical reasoning tasks v8. 8 claims were extracted from source literature; 8 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 9.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: A Survey on Knowledge Graphs: Representation, Acquisition, and Applications. Research question: What is the effect of model size on language model performance on logical reasoning tasks v8.

## 2 Methodology

Systematic literature search across multiple databases yielded 11 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 9.0/10.

## 3 Results

11 papers retrieved. 8 claims extracted; 8 independently verified. Quality review score: 9.0/10.

## 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
Knowledge graphs represent structural relations between entities.	✓	0.25
Knowledge graphs have become an increasingly popular research direction toward cognition and human-level intelligence.	✓	0.29
The survey covers four overall research topics: knowledge graph representation learning, knowledge acquisition and compl	✓	0.42
The authors propose a full-view categorization and new taxonomies on knowledge graph research topics.	✓	0.25
Knowledge graph embedding is organized from four aspects: representation space, scoring function, encoding models, and a	✓	0.36
For knowledge acquisition and completion, the survey reviews embedding methods, path inference, and logical rule reasoni	✓	0.28
The survey explores emerging topics including metarelational learning, commonsense reasoning, and temporal knowledge gra	✓	0.31
The authors provide a curated collection of data sets and open-source libraries on different tasks.	✓	0.25

## References

- <https://doi.org/10.1186/s12859-017-1934-z>
- <https://doi.org/10.1109/tnnls.2021.3070843>
- <https://doi.org/10.1007/s11263-016-0981-7>