

# FARSIQA and FAIR-RAG in Multi-Hop Scientific Reasoning: Performance and Architecture

Assignee Research

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## Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: How do language models handle multi-hop reasoning chains in scientific question answering v11. 8 claims were extracted from source literature; 2 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 5.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: FARSIQA: Faithful and Advanced RAG System for Islamic Question Answering. Research question: How do language models handle multi-hop reasoning chains in scientific question answering v11.

## 2 Methodology

Systematic literature search across multiple databases yielded 4 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 5.0/10.

## 3 Results

4 papers retrieved. 8 claims extracted; 2 independently verified. Quality review score: 5.0/10.

## 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
FARSIQA achieves a 'Answer Correctness' score of 74.3% on the icPCQA benchmark as evaluated via LLM-as-Judge on multi-hop	×	0.14
FARSIQA substantially outperforms standard baselines across metrics of relevance, correctness, and robustness on the icP	×	0.04
FARSIQA is built upon the FAIR-RAG architecture, which employs a dynamic, self-correcting process for retrieval-augmented	✓	0.25
FARSIQA operates on a curated knowledge base of over one million documents from authoritative Islamic sources.	×	0.14
FARSIQA achieves a 97.0% score in Negative Rejection on the IslamicPCQA benchmark, a 40-point improvement over standard	✓	0.16
The knowledge base for FARSIQA includes approximately 431,000 unique documents from eleven reputable online Persian Isla	×	0.07
The knowledge base for FARSIQA includes approximately 304,000 question-answer pairs from authoritative Q&A websites, nam	×	0.05
All sources for the knowledge base were crawled ethically, respecting copyrights and ensuring diversity across Islamic p	×	0.03

## References

- <http://arxiv.org/abs/2510.25621v1>
- <http://arxiv.org/abs/2404.14464v1>
- <http://arxiv.org/abs/1912.02145v1>