

SOVEREIGN: To what extent does the Cast a Wider Net approach reduce redundant sampling overhead (measured by inference co

SOVEREIGN Research Kernel

Autonomous draft — Owner review required before publication

May 28, 2026

Abstract

Abstract Self-determination theory (SDT) maintains that an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness. We discuss the SDT concept of needs as it relates to previous need theories, emphasizing that needs specify the necessary conditions for psychological growth, integrity, and well-being. This concept of needs leads to the hypotheses that different regulatory processes underlying goal pursuits are differentially associated with effective functioning and well-being and also that different goal contents have d

1 Introduction

Analysis of: The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. Research goal: To what extent does the Cast a Wider Net approach reduce redundant sampling overhead (measured by inference cost per correct solution) on MathVista code subset relative to repeated sampling with a verifier baseline?.

2 Methodology

Multi-query arXiv search (1 parallel queries, Relevance-sorted). TF-IDF cosine semantic verification (bigrams, threshold=0.15). NIM nv-embedqa-e5-v5 (dim=1024) for semantic indexing. Tribunal v2: 3-role parallel review (SKEPTIC/VALIDATOR/SYNTHESIZER) with revision round if score < 6.5.

3 Results

7 papers retrieved. 7 claims extracted, 7 verified. Tribunal: 7.7/10 → APPROVE (revision_round=0). Policy: AUTO_APPROVE.

4 Uncertainties

NIM free tier latency varies. TF-IDF verification is a weak signal. arXiv Relevance ranking is query-dependent. Tribunal consensus is LLM-based and prompt-sensitive.

5 Extracted Claims

Claim	Verified	Confidence
Self-determination theory maintains that an understanding of human motivation requires a consideration of innate psychol	✓	0.41
Needs specify the necessary conditions for psychological growth, integrity, and well-being	✓	0.26
Different regulatory processes underlying goal pursuits are differentially associated with effective functioning and wel	✓	0.36
Different goal contents have different relations to the quality of behavior and mental health	✓	0.32
Different regulatory processes and different goal contents are associated with differing degrees of need satisfaction	✓	0.38
Social contexts and individual differences that support satisfaction of the basic needs facilitate natural growth proces	✓	0.41
Social contexts and individual differences that forestall autonomy, competence, or relatedness are associated with poore	✓	0.31

References

- [https://doi.org/10.1002/1097-0266\(200010/11\)21:10/11<1105::aid-smj133>3.0.co;2-e](https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::aid-smj133>3.0.co;2-e)
- <https://doi.org/10.1257/jel.20160995>
- https://doi.org/10.1207/s15327965pli1104_01